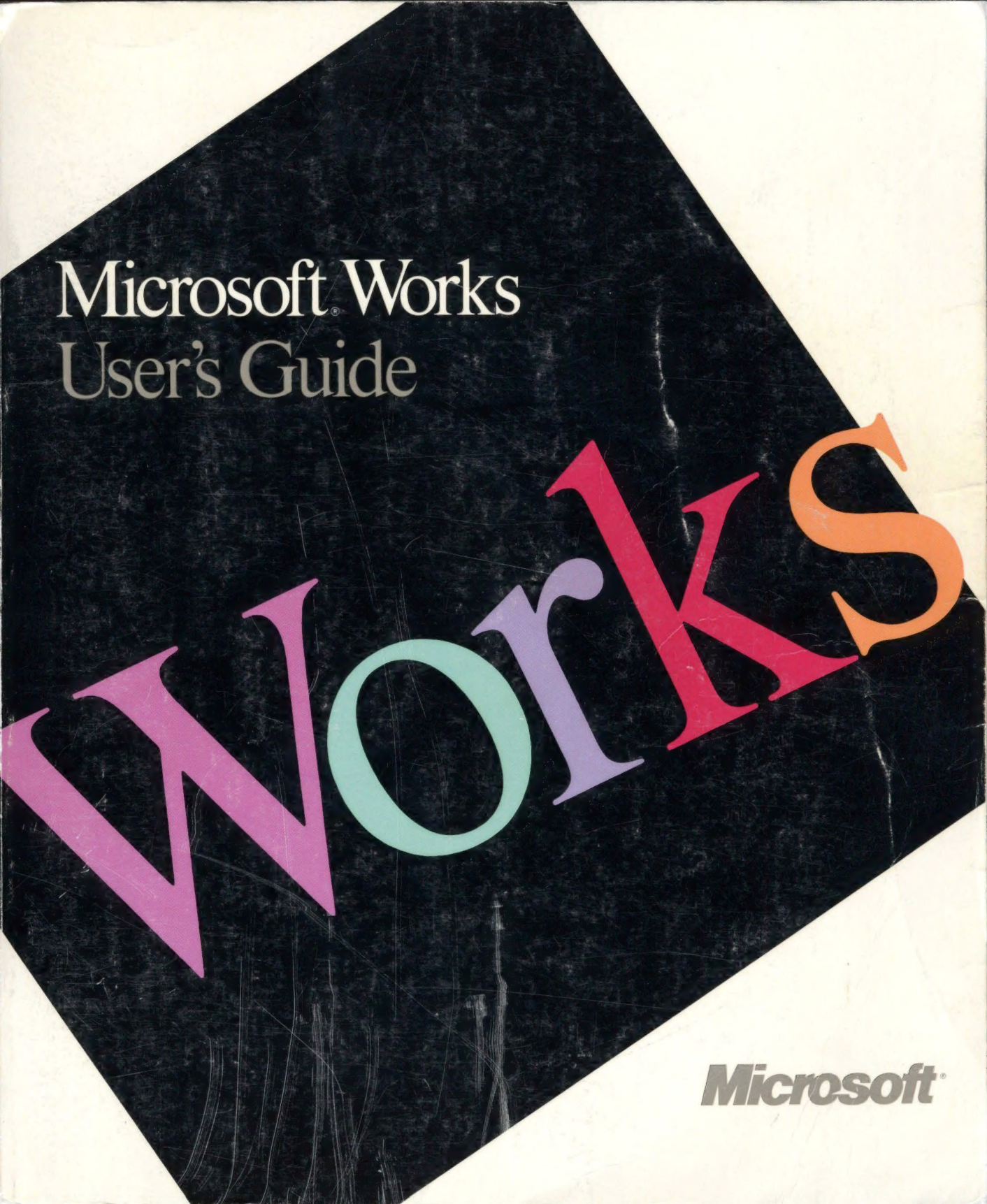
Microsoft® Works User's Guide



Microsoft®

Microsoft® Works Reference

For IBM® Personal Computers and Compatibles
and for the IBM Personal System/2™ Series

Microsoft Corporation

Information in this document is subject to change without notice and does not represent a commitment on the part of Microsoft Corporation. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of the agreement. The purchaser may make one copy of the software for backup purposes. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose other than the purchaser's personal use without the written permission of Microsoft Corporation.

©Copyright Microsoft Corporation, 1987, 1988. All rights reserved.
Simultaneously published in the U.S. and Canada.

If you have comments about this software, complete the Product Assistance Request at the back of this manual and return it to Microsoft.

Microsoft®, MS-DOS®, Multiplan®, and the Microsoft logo are registered trademarks of Microsoft Corporation.

dBase III® is a registered trademark of Ashton-Tate.

Hayes® is a registered trademark of Hayes Microcomputer Products, Inc.

Hercules™ is a trademark of Hercules Computer Technology.

IBM Personal System/2™ is a trademark, and IBM® is a registered trademark of International Business Machines Corporation.

Lotus 1-2-3® is a registered trademark of Lotus Development Corporation.

Document No. 990070004-100-R00-0987

Contents

Welcome to Microsoft Works xvii
The Word Processor xviii
The Spreadsheet xviii
The Database xviii
Communications xviii
Using the Tools Together xix
Getting Started xix
Learning Microsoft Works xx
Using the Setup Program xxii
If You Need Assistance xxiii
About This Manual xxiii
Symbols and Conventions xxiv

Microsoft Works Basic Skills 1

1 Introduction to Basic Skills 2
Starting Microsoft Works 2
Looking at a Works Screen 4
Other Elements of a Works Screen 5
Choosing a Command 6
Closing a Menu or Canceling a Command 7
How Works Carries Out Commands 8
Dialog Boxes 9
Carrying Out a Command from a Dialog Box 10
Messages in the Work Area 15

2 Using Basic Skills 16
Working with Files 16
Creating a File 17
Saving a File 17
Naming a File 18
Works Keeps a Backup Copy of Your Original 24
Closing a File 25
Opening an Existing File 26
Leaving Works Temporarily 29
Exiting Works 30
Switching Between Files 31
Getting Assistance from Within Works 31
Getting Help 32

Getting a Tutorial Lesson 35
Printing a File 37
Telling Works What Printer You Are Using 37
Formatting a File 38
Specifying the Page Layout 40
Printing Your File 43
Changing Works Settings 45
Common Menus and Commands 49

The Word Processor 51

3 Introduction to the Word Processor 52
Looking at the Word Processor Screen 53
Creating a Word Processor File 54
Typing Text 54
Selecting Text 55
Editing 55
Formatting Text 57
Printing and Page Layout 61
Other Word Processor Features 63

4 Word Processor Reference 64
Aligning Paragraphs 65
Bold Command (Format Menu) 66
Center Command (Format Menu) 67
Character Command (Format Menu) 67
Characters 68
Check Spelling Command (Options Menu) 69
Copy Command (Edit Menu) 70
Copy Special Command (Edit Menu) 70
Copying Text 71
Delete Command (Edit Menu) 72
Deleting Text 72
Double Space Command (Format Menu) 73
Editing 73
Fonts 73
Form Letters and Forms 74
About Placeholders 75
Formatting Characters 78
Formatting Paragraphs 82
Go To Command (Select Menu) 86
Headers & Footers Command (Options Menu) 86
Indenting Paragraphs 90
Insert Chart Command (Edit Menu) 94

Insert Field Command (Print Menu) 96
Insert Special Command (Edit Menu) 97
Inserting Text 98
Italic Command (Format Menu) 99
Justified Command (Format Menu) 99
Keyboard 99
Left Command (Format Menu) 103
Long Files 103
Mailing Labels 103
Manual Pagination Command (Options Menu) 108
Margins 108
Measurements 110
Move Command (Edit Menu) 111
Moving Text 111
Moving Within a File 112
Normal Paragraph Command (Format Menu) 112
Page Breaks and Pagination 112
Page Numbers 115
Paginate Now Command (Options Menu) 116
Paragraph Command (Format Menu) 116
Paragraphs 118
Plain Text Command (Format Menu) 120
Print Command (Print Menu) 121
Print Labels Command (Print Menu) 121
Print Merge Command (Print Menu) 123
Replace Command (Select Menu) 124
Ruler 125
Save As Command (File Menu) 125
Search Command (Select Menu) 126
Searching and Replacing 127
Selecting 130
Show All Characters Command (Options Menu) 133
Show Ruler Command (Options Menu) 133
Single Space Command (Format Menu) 134
Spacing Between Lines and Paragraphs 134
Special Characters 137
Spelling 139
Split Command (Options Menu) 142
Status Line 143
Tab Stops and Tables 143
Tabs Command (Format Menu) 149
Template Files 150
Typing Text 150
Underline Command (Format Menu) 152
Undo Command (Edit Menu) 152

The Spreadsheet 153

5 Introduction to the Spreadsheet 154
Looking at a Spreadsheet 155
The Formula Bar and the Active Cell 156
Numbers, Formulas, and Text 156
Relative and Absolute References 159
Creating a Spreadsheet 160
Selecting Cells 161
Entering Numbers or Text 161
Entering Formulas 162
Entering References into Formulas with Point Mode 162
Editing Your Data 163
Formatting Cells 164
Copying Cells 165
Printing a Spreadsheet 167

6 Spreadsheet Reference 168
Aligning Values 168
Calculate Now Command (Options Menu) 168
Calculating 169
Charts Command (Chart Menu) 170
Circular References 170
Clear Command (Edit Menu) 171
Column Command (Select Menu) 171
Comma Command (Format Menu) 171
Copy Command (Edit Menu) 172
Copy Special Command (Edit Menu) 172
Copying 173
Dates and Times 176
Define Command (Chart Menu) 179
Delete Command (Edit Menu) 179
Delete Page Break Command (Print Menu) 179
Dollar Command (Format Menu) 180
Editing 180
Entering 181
Erasing 186
Clearing 186
Deleting 187
Exponential Command (Format Menu) 187
Fill Down Command (Edit Menu) 188
Fill Right Command (Edit Menu) 188
Fixed Command (Format Menu) 188
Font Command (Print Menu) 188
Formatting Numbers 189

Formulas 191
How Works Evaluates a Formula 192
Using Functions in Formulas 193
Freeze Titles Command (Options Menu) 194
Functions 196
General Command (Format Menu) 196
Go To Command (Select Menu) 196
Hiding 197
Insert Command (Edit Menu) 198
Insert Page Break Command (Print Menu) 198
Keyboard 199
Layout Command (Print Menu) 201
Locks 201
Logical Command (Format Menu) 202
Manual Calculation Command (Options Menu) 202
Move Command (Edit Menu) 202
Name Command (Edit Menu) 203
New Command (Chart Menu) 206
Page Breaks and Pagination 206
Percent Command (Format Menu) 208
Print Chart Command (Print Menu) 208
Print Command (Print Menu) 208
Protect Command (Options Menu) 210
Ranges 211
References 213
Row Command (Select Menu) 217
Search Command (Select Menu) 218
Select Text Printer Command (Print Menu) 220
Selecting 220
Set Print Area Command (Print Menu) 221
Show Formulas Command (Options Menu) 222
Split Command (Options Menu) 223
Status Line 224
Style Command (Format Menu) 225
Time/Date Command (Format Menu) 226
Unfreeze Titles Command (Options Menu) 227
View Command (Chart Menu) 227
Width Command (Format Menu) 227

7 Spreadsheet and Database Functions 229
Function Syntax 229
ABS(x) 229
ACOS(x) 230
ASIN(x) 230
ATAN(x) 230
ATAN2(x-coordinate,y-coordinate) 230

AVG(RangeReference0,RangeReference1,...) 231
CHOOSE(Choice,Option0,Option1,...) 231
COLS(RangeReference) 232
COS(x) 232
COUNT(RangeReference0,RangeReference1,...) 232
CTERM(Rate,FutureValue,PresentValue) 233
DATE(Year,Month,Day) 233
DAY(DateNumber) MONTH(DateNumber) YEAR(DateNumber) 234
DDB(Cost,Salvage,Life,Period) 234
ERR() 235
EXP(x) 235
FALSE() 236
FV(Payment,Rate,Term) 236
HLOOKUP(LookupValue,RangeReference,RowNumber)
VLOOKUP(LookupValue,RangeReference,ColumnNumber) 237
HOUR(TimeNumber)
MINUTE(TimeNumber) SECOND(TimeNumber) 238
IF(Condition,ValueIfTrue,ValueIfFalse) 238
INDEX(RangeReference,Column,Row) 239
INT(x) 240
IRR(Guess,RangeReference) 240
ISERR(x) 240
ISNA(x) 241
LN(x) 242
LOG(x) 243
MAX(RangeReference0,RangeReference1,...) 243
MIN(RangeReference0,RangeReference1,...) 244
MINUTE(TimeNumber) 244
MOD(Numerator,Denominator) 245
MONTH(DateNumber) 245
NA() 245
NOW() 246
NPV(Rate,RangeReference) 246
PI() 247
PMT(Principal,Rate,Term) 247
PV(Payment,Rate,Term) 248
RAND() 248
RATE(FutureValue,PresentValue,Term) 248
ROUND(x,NumberOfPlaces) 249
ROWS(RangeReference) 249
SECOND(TimeNumber) 250
SIN(x) 250
SLN(Cost,Salvage,Life) 250
SQRT(x) 251
STD(RangeReference0,RangeReference1,...) 251
SUM(RangeReference0,RangeReference1,...) 251

SYD(Cost,Salvage,Life,Period) 252
TAN(x) 253
TERM(Payment,Rate,FutureValue) 253
TIME(Hour,Minute,Second) 254
TRUE() 254
VAR(RangeReference0,RangeReference1,...) 254
VLOOKUP 255
YEAR(DateNumber) 255

8 Introduction to Charting 257
Elements of a Chart 258
Types of Charts 262
Creating a Chart 264
Changing the Chart Type 271
Labeling a Chart 273
Formatting a Chart 274
Specifying the Chart Layout 276
Printing a Chart 277
Leaving the Chart Screen 278

9 Charting Reference 279
100% Bar Command (Format Menu) 279
1st to 6th Y-Series Commands (Data Menu) 280
Area Line Command (Format Menu) 281
Axes 282
Bar Command (Format Menu) 283
Borders 284
Charts Command (Chart Menu) 284
Colors 285
Copying a Chart 285
Creating a Chart 286
Data Format Command (Format Menu) 291
Data Labels Command (Data Menu) 294
Define Command (Spreadsheet Chart Menu) 295
Deleting 295
Exit Chart Command (Chart Menu) 296
Fonts 297
Format For B&W Command (Options Menu) 297
Formatting a Chart 298
Gridlines 300
Hi-Lo-Close Command (Format Menu) 301
Keyboard 302
Labeling and Titling a Chart 302
Layout Command (Print Menu) 305
Legends Command (Data Menu) 306
Line Command (Format Menu) 307
List Printer Formats Command (Options Menu) 308

Markers 308
Mixed Line & Bar Command (Options Menu) 309
Naming a Chart 310
New Command (Chart Menu) 311
Other Font Command (Print Menu) 312
Page Layout 313
Patterns 314
Pie Command (Format Menu) 314
Print Command (Print Menu) 315
Right Y-Axis Command (Options Menu) 317
Scale 318
Select Chart Printer Command (Print Menu) 323
Selecting 323
Series Command (Data Menu) 324
Show Border Command (Options Menu) 325
Show Legends Command (Options Menu) 325
Show Printer Fonts Command (Options Menu) 325
Stacked Bar Command (Format Menu) 326
Title Font Command (Print Menu) 327
Titles Command (Data Menu) 327
Two Y-Axes Command (Options Menu) 328
View Command (Chart Menu) 329
X-Axis Command (Options Menu) 330
X-Series Command (Data Menu) 331
X-Y Command (Format Menu) 332
Y-Axis Command (Options Menu) 333
Y-Series 334

The Database 337

10 Introduction to the Database 338
Looking at a Database 338
The Formula Bar and the Active Cell 340
Numbers, Field Formulas, and Text 341
Creating a Database 342
Creating a Database Using the List Screen 344
Creating a Database Using the Form Screen 345
Entering and Editing 346
Querying the Database 351
Sorting Records 356
Printing 357

11 Database Reference 359
Aligning Values 359

Apply Query Command (Query Menu) 359
Changing a Form 360
Clear Command (Edit Menu) (List, Form, Query) 362
Comma Command (Format Menu) (List, Form, Form Design) 362
Copying 363
Creating a Database 365
Dates and Times 368
Define Form Command (Options Menu) (Form) 370
Define Query Command (Query Menu) (List, Form) 371
Define Report Command (Report Menu) (List, Form) 371
Delete Command (Edit Menu) (List, Form, Form Design, Query) 372
Delete Page Break Command (Print Menu) (List) 372
Dollar Command (Format Menu) (List, Form, Form Design) 373
Entering and Editing 373
Erasing 379
  Clearing 379
  Deleting 380
Exit Design Command (Edit Menu) (Form Design) 382
Exit Query Command (Edit Menu) (Query) 382
Exponential Command (Format Menu) (List, Form, Form Design) 383
Field Command (Select Menu) (List) 383
Field Formulas 383
  How Works Evaluates Field Formulas 384
  Using Functions in Field Formulas 385
  Using Dates and Times in Field Formulas 386
Fill Down Command
Fill Right Command (Edit Menu) (List) 387
Fixed Command (Format Menu) (List, Form, Form Design) 387
Font Command (Print Menu) (List) 387
Formatting Numbers 388
General Command (Format Menu) (List, Form, Form Design) 390
Go To Command (Select Menu) (List, Form) 390
Hide Record Command (Query Menu) (List, Form) 392
Hiding 392
Insert Command (Edit Menu) (List, Form) 393
Insert Page Break Command (Print Menu) (List) 394
Keyboard 394
Layout Command (Print Menu) (List, Form) 398
Logical Command (Format Menu) (List, Form) 398
Move Command (Edit Menu) (List, Form, Form Design) 398
Name Command (Edit Menu) (List) 399
Naming Fields 400
Page Breaks and Pagination 402
Percent Command (Format Menu) 403
Print Command (Print Menu) (List, Form) 403
Protect Command (Options Menu) 404

Querying 405
Record Command (Select Menu) (List) 416
Search Command (Select Menu) (List, Form) 416
Select Text Printer (Print Menu) (List, Form) 419
Selecting (List, Form) 419
Show All Records Command (Query Menu) (List, Form) 421
Show Field Name Command (Format Menu) (Form Design) 421
Sort Command (Query Menu) (List, Form) 422
Split Command (Options Menu) (List) 425
Status Line 426
Style Command (Format Menu) (List, Form, Report) 427
Switch Hidden Records Command (Query Menu) (List, Form) 428
Time/Date Command (Format Menu) (List, Form) 428
View Form Command (Options Menu) (List) 429
View List Command (Options Menu) (Form) 429
Width Command (Format Menu) (List, Form Design) 429

12 Introduction to Reporting 433
Looking at Report Definitions and Reports 434
Creating and Viewing a Report 437
Printing a Report 444

13 Reporting Reference 445
Aligning Values 445
Clear Command (Edit Menu) 445
Column Command (Select Menu) 446
Comma Command (Format Menu) 446
Copy Command (Edit Menu) 446
Copying Reports 447
Creating a Report 447
Dates and Times 448
Define Command (Query Menu) 448
Delete Command (Edit Menu) 448
Delete Page Break Command (Print Menu) 449
Deleting Reports 449
Dollar Command (Format Menu) 449
Entering and Editing 450
Erasing 454
  Clearing 454
  Deleting 455
Exit Report Command (Report Menu) 455
Exponential Command (Format Menu) 456
Field Name Command (Edit Menu) 456
Field Summary Command (Edit Menu) 457
Field Value Command (Edit Menu) 457
Fixed Command (Format Menu) 458

Font Command (Print Menu) 458
Formatting Numbers 459
Formulas 461
General Command (Format Menu) 461
Insert Command (Edit Menu) 462
Insert Page Break Command (Print Menu) 463
Keyboard 463
Layout Command (Print Menu) 467
Logical Command (Format Menu) 467
Move Command (Edit Menu) 467
Naming Reports 468
New Command (Report Menu) 469
Page Breaks and Pagination 469
Percent Command (Format Menu) 471
Print Command (Print Menu) 471
Print Report Command (Print Menu)(List, Form) 471
Querying 472
Reports Command (Report Menu) 472
Row Command (Select Menu) 473
Row Types 473
Save As Command (Report Menu) 475
Select Text Printer Command (Print Menu) 476
Selecting 476
Sort Command (Query Menu) 478
Status Line 480
Style Command (Format Menu) 481
Time/Date Command (Format Menu) 482
View Command (Report Menu) 482
Width Command (Format Menu) 483

Communications 485

14 Introduction to Communications 486
Getting Ready for Communications 486
Installing a Modem 486
Installing a Direct-Connect Cable 487
Starting a Communications Session 488
Opening or Creating a Communications File 488
Making a Connection 490
Sending and Receiving Information 491
Ending Your Communications Session 492
Putting Communications to Work 493
Using Information Services 493
Automatic Sign-On 493
Using Your PC as a Terminal 494
Exchanging Information with Other PC Users 494

15 Communications Reference 495
Add to Incoming Lines (Options Menu, Terminal Dialog Box) 495
Answering Incoming Calls 495
ASCII Files 496
Automatic Answer (Options Menu, Phone Dialog Box) 496
Baud Rate (Options Menu, Communication Dialog Box) 497
Binary Files 497
Break Command (Connect Menu) 498
Cable Connections 498
Calling a Mainframe or Minicomputer 499
Calling a Personal Computer 499
Calling an Information Service 500
Capture Text Command (Transfer Menu) 501
Appending or Overwriting Text During Capture 502
If You Run Out of Disk Space During Text Capture 502
Communication Command (Options Menu) 503
Communications File 504
Switching to Another Window When Connected 504
Connect Command (Connect Menu) 505
Connecting 505
Connecting with a Modem 505
Connecting with a Cable 506
Cursor Alternate (Options Menu, Terminal Dialog Box) 507
Data Bits (Options Menu, Communication Dialog Box) 507
Delay (Transfer Menu, Send Text Dialog Box) 507
Dial Again Command (Connect Menu) 508
Dial Type (Options Menu, Phone Dialog Box) 508
Dialing/Redialing 508
Disconnecting 509
Download 510
Full Screen (Options Menu, Terminal Dialog Box) 510
Handshake (Options Menu, Communication Dialog Box) 511
Software Handshaking — XOn/XOff 511
Hardware Handshaking 512
Hayes-Compatible Modems 512
Host Computer 512
Keypad Alternate (Options Menu, Terminal Dialog Box) 513
Local Echo (Options Menu, Terminal Dialog Box) 513
Modem Setup (Options Menu, Phone Dialog Box) 514
Modems 515
Parity (Options Menu, Communication Dialog Box) 515
Pausing Communications 516
Phone Command (Options Menu) 516
Phone Number (Options Menu, Phone Dialog Box) 517
Port (Options Menu, Communication Dialog Box) 518
Printing Captured Text 518

Protocol 519
Receive Protocol Command (Transfer Menu) 519
Receiving Files 520
Record Sign-On Command (Connect Menu) 522
Recording a Sign-On 522
Send Protocol Command (Transfer Menu) 524
Send Text Command (Transfer Menu) 525
Sending Files (XMODEM Protocol) 525
Sending Text 527
Setting Up for Communications 528
Creating or Opening a Communications File 528
Adjusting Settings for Different Communications Sessions 529
Saving Your Settings 531
Signing On 531
Sign-On Command (Connect Menu) 532
Stop Bits (Options Menu, Communication Dialog Box) 532
Terminal Command (Options Menu) 532
Terminal Type (Emulation) 534
Text File 534
Upload 535
Wraparound (Options Menu, Terminal Dialog Box) 535
XMODEM Protocol 535

Using the Tools Together 537

16 Exchanging Information Between Tools 538
Integrating Information in the Word Processor 538
Copying from the Spreadsheet or the Database to the Word Processor 539
Inserting a Spreadsheet Chart into a Word Processor File 541
Printing a Word Processor File that Contains a Chart 543
Inserting a Database Report Summary into a Works File 543
Copying from the Word Processor to the Database or the Spreadsheet 544
Copying Information Between the Database and the Spreadsheet 546
Using Information from Communications Sessions 547

Index 11

Microsoft Works gives you all the office tools you may ever need in one package:

- The Word Processor
- The Spreadsheet with Charting
- The Database with Reporting
- Communications

You can switch easily between the tools, combine information, and present it in most any form — without having to quit one tool and start another.

Works is easy to learn. Once you learn a few basic skills and commands, you can use them in all of the tools. There are also lots of ways to get help whenever you need it.

You can even transfer your work to and from other programs, such as Lotus 1-2-3 and dBASE III.

The Word Processor

Use the Word Processor to write and revise letters, memos, invoices, and reports — anything you want to see in print. You can undo mistakes, check your spelling, and search for specific words and replace them. Emphasize parts of your document with type fonts, like Helvetica and Times Roman, or styles, like bold, italic, and underlined.

The Spreadsheet

Use the Spreadsheet to do financial, statistical, and scientific calculations. You can create a budget, calculate your taxes, track business expenses, prepare loan amortization schedules, and much more. Create your own formulas, or use Works' built-in functions to make your work easier. If you change your numbers, Works redoes your calculations automatically.

Charting

Use Charting to see what your Spreadsheet numbers look like in charts. If you make a change in the Spreadsheet, the chart updates automatically. Choose from these chart types: bar, stacked bar, 100% bar, line, area line, hi-lo-close, pie, and x-y.

The Database

Use the Database to store information, such as mailing lists, customer lists, schedules, and insurance information. You can find information matching specific criteria, sort the information numerically or alphabetically, or merge database information with a word processor file for mailing labels and form letters.

Reporting

Reporting sorts information from the Database and presents it in a report complete with summaries and explanatory text. Whenever you print your report, Works uses your latest database information.

Communications

Use Communications to receive up-to-date information and send it immediately to others — in your office or on the other side of the world. You can exchange Works files, computer programs, and other information using utilities such as information services, bulletin boards, electronic mail, and computer-to-computer transfer.

Using the Tools Together

Works is several tools but one program. That means you can work with several tools at once and copy information from one tool to another.

For example, you can copy information from a database to a spreadsheet, do some calculations, view the results in a chart, and combine everything in a word processing document to present to your boss. You can get stock quotations from an information service, and copy them into a spreadsheet to determine your financial status. You can use the Database with the Word Processor's mail merge to print mailing labels and personalize your form letters.

Getting Started

This manual is a complete reference to Microsoft Works.

Before you use Works and this manual, we suggest you follow the steps below.

1. Set up your computer by following the instructions in your computer manual.
2. Go through the Learning Microsoft Works tutorial to learn the basic skills, then choose a tool and go through the tutorial lessons to learn it. Use the tutorial to learn each tool as you're ready.

   To learn how to start the tutorial, see "Learning Microsoft Works" in this chapter.
3. Use the Setup program to make a working copy of the Works Program diskette or copy Works to a hard disk, and to tell Works which printer you use.

   To learn how to run the Setup program, see "Using the Setup Program" in this chapter.
4. Start Works.

   To learn how to start Works, see "Starting Microsoft Works" in Chapter 1 of this manual.

Use this manual as a reference rather than a learning tool. For more information on the manual, see "About This Manual" in this chapter.

Note Information in a README.WPS file may supersede information in this manual. If there is a README.WPS file on the Utilities/Setup diskette, read it before you continue with the rest of this manual.

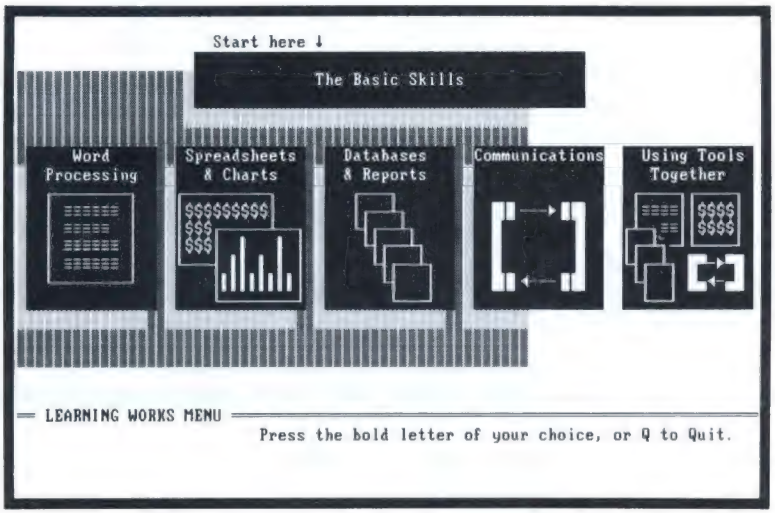
Use the DOS DIR command to see a list of the files on the Utilities/Setup diskette. If you see the name README.WPS, read the file for additional information about Microsoft Works.

To read the contents of the README.WPS file on your screen

1. After the DOS prompt that appears on your screen, type *type readme.wps*
2. Press ENTER.
3. Press CONTROL+S to stop the text from scrolling.
4. Press any key to continue scrolling.

Learning Microsoft Works

Learn Works in the fastest, easiest way possible — by working through a series of short lessons right on your computer. The Learning Microsoft Works tutorial is divided into six sections:



In each section, you'll find a list of lessons to choose from. In each lesson you'll learn new skills, and have a chance to practice what you've learned. If you make a mistake, the tutorial tells you how to correct it.

You can start and stop learning whenever you want, and the tutorial keeps track of which lessons you've finished. Although it's best to work through the lessons in order, you can refer to them in any order and work through the practices any number of times.

To start the Learning Microsoft Works tutorial

If your computer has two 360K diskette drives or one or more 720K diskette drives, follow the instructions under "If you have a diskette system."

If your computer has a hard disk drive, follow the instructions under "If you have a hard disk system."

If you have a diskette system

1. Start your computer.
2. When the DOS prompt appears on your screen, remove the DOS diskette from drive A and insert the Learning Microsoft Works Part 1 diskette.
3. Type *learn*
4. Press ENTER.
5. Follow the instructions on the screen.

If you have a hard disk system

It is not necessary to copy the Learning Microsoft Works diskettes to your hard disk before using the tutorial, but we recommend that you do. See the instructions under "Using the Setup Program" in this chapter to copy everything you need to your hard disk.

1. Start your computer.
2. If you have not copied the tutorial to your hard disk, insert the Learning Microsoft Works Part 1 diskette in drive A. At the DOS prompt, type

   a:learn

   If you have copied the tutorial to your hard disk, make sure you are in the directory you copied Learning Microsoft Works to. At the DOS prompt, type

   learn
3. Press ENTER.
4. Follow the instructions on the screen.

Using the Setup Program

You must use the Setup program before you begin using Works.

You use Setup to:

- Make a working copy of the Works Program diskette, if you have a diskette system.
- Copy Works to your hard disk, if you have a hard disk system.
- Tell Works which printer(s) you are using.
- Tell Works what kind of graphics card and monitor you are using.
- Install the software for your mouse if you have one.

Setup takes only a few minutes to complete and is easy to use. Just start the program and then follow the instructions that appear on your screen.

Note Diskettes can be damaged by heat, magnetism, dust, or careless handling, or they can be lost. Protect your purchase by making copies of your Microsoft Works diskettes. If you have a hard disk system, use Setup to copy Works to your hard disk. If you have a diskette system, make backup copies of your diskettes using the DOS DISKCOPY command and then use Setup. Remember to label your copies. Store the original diskettes in a safe place. Use the backup copies whenever you work with Microsoft Works.

To start the Setup program

1. Start your computer.
2. When the DOS prompt appears, insert the Utilities/Setup diskette in drive A.
3. At the DOS prompt, type *a:setup*
4. Press ENTER.
5. Follow the instructions on the screen.

Note If you want to use a mouse with Works, see Appendix D, "Using a Mouse with Works," for important information.

If You Need Assistance

There are three ways to get assistance while using Works:

- Read the message line on the bottom of the screen for a short description of each command.
- Get on-line Help based on the command you are using.
- Get a Learning Microsoft Works tutorial lesson related to the command you are using.

For more information, see "Getting Assistance from Within Works" in Chapter 2.

In addition, if you have a question about Works and you can't find the answer in the tutorial, or in your manual, call product support at this number: 206-828-8089. When you call, please have the following at hand:

- The product number (found on your diskette labels, and in the Settings command dialog box on the Window menu)
- The name and model of your computer
- The name and model of your modem, printer, mouse, and cables, if used
- The name and model of any special cards, if used
- The *Microsoft Works Reference*

About This Manual

This manual is organized as follows:

- This chapter introduces Works and tells you how to use the tutorial and the Setup program.
- Chapters 1 and 2 explain basic skills — how to start Works, its basic components, and how to use common skills and commands.
- Each tool — Word Processor, Spreadsheet, Charting, Database, Reporting, and Communications — is presented in two chapters. The first chapter acquaints you with basic concepts. The second chapter is an alphabetic reference for using Works that contains information on commands and tasks.

  For information on a specific command, look for the command name. For information on a specific task, look for a topic for that task. If you don't know the name of the command or task, check the index.
- "Using the Tools Together" explains how to combine the information created in one tool with the information created in another tool.

Symbols and Conventions

This manual uses a few special symbols and conventions:

- *Italics* for text and numbers you type exactly as shown, or as you see them on the screen. For example, if the manual says to type

  cd works

  you would type the lower-case letters "cd" followed by a space and the lower-case word "works."

- Regular type for something you must type and name yourself. This will be different depending on what you are doing. For example, when the manual says to type

  cd directoryname

  it means to type cd followed by a space, then the name of your directory. If you had a directory called Budget, you would type

  cd budget

- *Tips* provide hints on using Works. You can skip over the tips when you're first learning, and return to them whenever you're ready for more details.

- Keys are sometimes used in combinations. When the manual says to press SHIFT + F1, for example, you hold down the SHIFT key while pressing F1.

- DIRECTION keys is the collective name for the UP, DOWN, LEFT, and RIGHT keys. All four DIRECTION keys are part of the larger category of movement keys. For more information about keys, see the "Keyboard" topic in the reference chapter for each tool.

Microsoft Works Basic Skills

Chapter 1, "Introduction to Basic Skills," and Chapter 2, "Using Basic Skills," provide the background information you need to use any of the Works tools.

- Chapter 1 tells you how to start Works, what Works screens look like, and how to tell Works what you want it to do.
- Chapter 2 introduces you to skills that are common to all of the tools, like saving or printing files.

The best way to learn Works basics is to go through the Learning Microsoft Works tutorial. The tutorial shows you how to use Works and lets you practice as much as you want. If you make a mistake, the tutorial immediately tells you how to correct it. After you've completed the tutorial, you'll be ready to put Works to work for you.

"Getting Started," in "Welcome to Microsoft Works," provides instructions for starting the tutorial.

If you decide not to go through the tutorial, it's a good idea to read Chapters 1 and 2 before you go on to use any of the tools.

1 Introduction to Basic Skills

In this chapter you'll learn:

- How to start Works
- What a Works screen looks like
- How to use menus and choose commands
- What a dialog box is and how to use it
- About messages that appear in your work area

Starting Microsoft Works

If your computer has only diskette drives, follow the instructions under "If you have a diskette system." If your computer has a hard disk drive, follow the instructions under "If you have a hard disk system."

If you have a diskette system

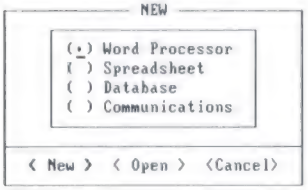
Before you start Works, use the Setup program to make a working copy of the Program diskette. "Getting Started" provides instructions for using Setup.

1. Start your computer.
2. Insert your working copy of the Works Program diskette in drive A.
3. If your computer has a second diskette drive, insert a blank, formatted diskette in drive B.

   The work you do will be stored on this diskette.
4. At the DOS prompt, type

   works
5. Press ENTER.

   Works displays copyright information briefly on your computer screen and then displays a box from which you select a tool.



6. Press the ALT key.

   The first letter in each tool name becomes bold.

7. Press the bold letter of the tool you want to use.

   You may want to adjust the brightness of your screen to see these letters better.

8. Press ENTER.

   Works displays the screen for the tool you selected and you can begin typing text or numbers.

If you have a hard disk system

Before you start Works, use the Setup program to copy Works to your hard disk. "Getting Started" provides instructions for using Setup.

1. Turn on your computer.

   The DOS prompt appears on your screen.

2. At the DOS prompt, change to the directory you copied Works to by typing

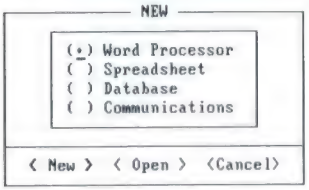
   cd directoryname

3. When the DOS prompt appears again, type

   works

4. Press ENTER.

   Works displays copyright information briefly on your computer screen and then displays a box from which you select a tool.



5. Press the ALT key.

   The first letter in each tool name becomes bold.

6. Type the bold letter of the tool you want to use.

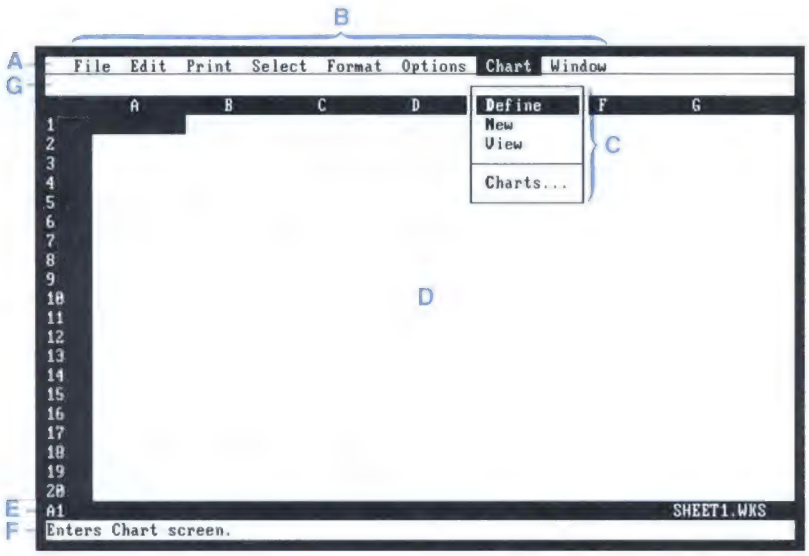
   You may want to adjust the brightness of your screen to see these letters better.

7. Press ENTER.

   Works displays the screen for the tool you selected and you can begin typing text or numbers.

Looking at a Works Screen

The screen for each Works tool looks different from the others, but there are elements that are common to each. The Spreadsheet screen provides an example of the common elements:



A Menu Bar
B Menus
C Commands
D Work area
E Status line
F Message line
G Formula bar

Menu bar The menu bar lists menu names. The names differ depending on the tool you are using.

Menus Menus list commands. The commands in the menus are similar from tool to tool.

Commands You use commands to tell Works what to do. For example, you use one command to save a file and another command to print it. Commands are grouped into menus and each tool has its own set of menus and commands.

Work area A file is displayed in the work area. You can work with text and numbers, or communicate with another computer in this area.

Status line Works displays status information in the status line. You can keep track of the filename, your location in the file (page, cell, or field name), and keys that are locked (number and capitals lock). The status line also displays other information, as explained in the reference chapter for each tool.

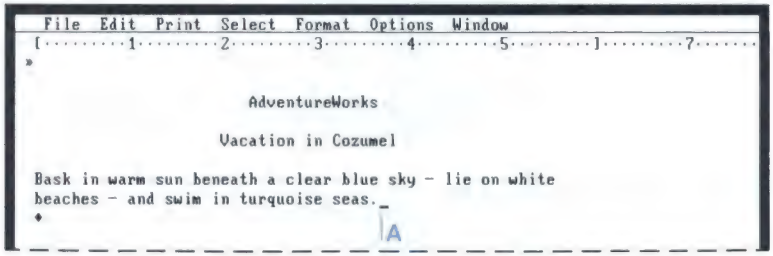
Message line The message line displays a one-line description of commands and sometimes tells you what action to take.

Formula bar In the Spreadsheet and the Database, you type and edit text and numbers in the formula bar before you enter them into the work area.

In the Word Processor, you can display the ruler or an additional line of text in this location.

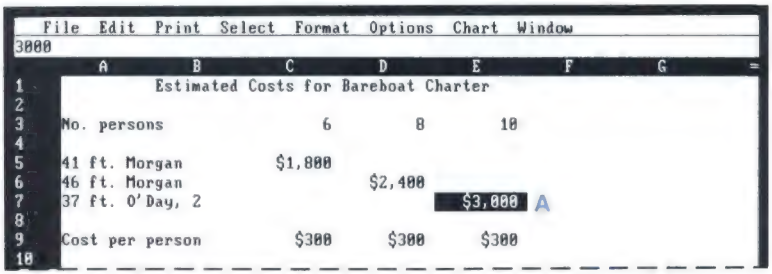
Other Elements of a Works Screen

The cursor is a blinking underline that tells you where you are on the screen. When you type text and numbers, they appear to the left of the cursor.


File Edit Print Select Format Options Window
AdventureWorks
Vacation in Cozumel
Bask in warm sun beneath a clear blue sky - lie on white beaches - and swim in turquoise seas.
A

A Cursor

The highlight is a bold rectangle. You move the highlight to the numbers you want to select.


File Edit Print Select Format Options Chart Window
3000
A B C D E F G
Estimated Costs for Bareboat Charter
No. persons 6 8 10
41 ft. Morgan $1,000
46 ft. Morgan $2,400
37 ft. O'Day, 2 $3,000
Cost per person $300 $300 $300
A

A Highlight

Selecting text or numbers tells Works exactly what portion of the file you want to work on. You select text or numbers by moving the cursor or the highlight. Selected text or numbers is called a selection.

Choosing a Command

Commands tell Works what you want to do. You choose commands from the menus in the menu bar, using either of two methods:

- The bold letter method chooses commands very quickly.
- The TAB and DIRECTION key method displays a description of the command in the message line. You can refer to this description if you are unsure of what the command does.

Whether you use the bold letter or TAB and DIRECTION key method, there are three steps to choosing a command:

1. Activate the menu bar.
2. Open the menu containing the command.
3. Choose the command.

In the tables that follow, learn the bold letter method for each of these steps by reading the instructions in the left column of the table. Learn the TAB and DIRECTION key method by reading the instructions in the right column.

Step 1: To activate the menu bar

Bold letter method	TAB and DIRECTION key method
Press ALT.	Press ALT.

The menu bar is activated and the File menu is selected.

Step 2: To open a menu

Bold letter method	TAB and DIRECTION key method
One letter in each menu name is bold. Press the bold letter in the menu name you want to open.	Press the RIGHT or LEFT key to select the menu you want to open. Press ENTER.

The menu drops down and you see the command names. The first command is selected.

Step 3: To choose a command

Bold letter method	TAB and DIRECTION key method
Press the bold letter in the command name you want to choose.	Use the UP and DOWN keys to select a command. Press ENTER.

Note You can choose some commands without going through a menu, using "shortcut" keys. For more information, see the "Keyboard" topic in the reference chapter for each tool.

If a command does not apply to the task you are performing, the command name won't have a bold letter and you won't be able to choose it.

Closing a Menu or Canceling a Command

If you open a menu or choose a command, and then don't want to use it:

- Press ESCAPE.

Note Pressing ESCAPE always cancels a command or other action; pressing ENTER carries out a command or action.

Tip

Browsing Through the Menu

If you use the TAB and DIRECTION key method to select a command, Works displays a one-line description of the command in the message line.

1. Open a menu.
2. Use the UP and DOWN keys to select a command.

3. Read the command description in the message line.
4. Use the RIGHT and LEFT keys to move from a command in one menu to the first command in a neighboring menu. The command description changes to describe the command that is selected now.

How Works Carries Out Commands

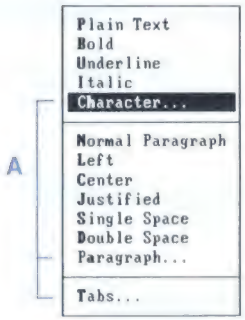
Works carries out commands based on the information you provide. Some commands, like the commands on the Edit menu, act on specific text or numbers after you select them, while other commands, like the commands on the File menu, act on the entire file.

Some commands, like Exit, are carried out as soon as you choose them.

Some commands, like Split in the Spreadsheet, display a message in the message line. These commands are carried out when you follow the instructions.

```
Use direction keys to move splits and press ENTER.
```

Some commands, like Character in the Word Processor, require more information or confirmation before Works can carry them out. These commands are followed by an ellipsis (...) on the menu.



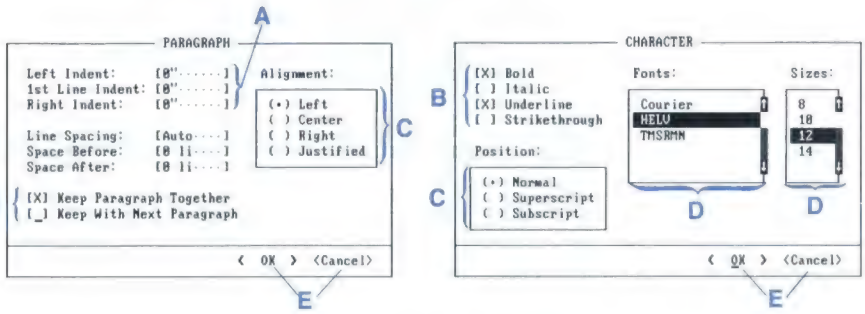
A These commands have dialog boxes.

When you choose one of these commands, Works displays a dialog box.

Dialog Boxes

Before Works can carry out a command that has a dialog box, you type information in the dialog box and make choices from the options presented.

Works dialog boxes are made from five elements. Two Word Processor dialog boxes provide examples of the five elements:



A Text boxes
B Check boxes
C Option box
D List boxes
E Buttons

Text box You type text or numbers in a text box. For example, you type the number of inches to indent a paragraph in the Left Indent text box.

Check box You turn an option on or off in a check box. For example, you make a word bold or not bold with the Bold check box. An X inside a check box means that the option is turned on.

Option box You select one of several options in an option box. For example, you give a paragraph either left, center, right, or justified alignment with the options in the Alignment option box. A mark beside an option means that it is the selected option in the box.

List box Works presents lists in a list box. You select one item from among several in a list box. For example, you select the font you want to use from the Fonts list box. The selected item in a list is highlighted.

Button You choose buttons to carry out or cancel a command, or to answer a question from Works.

Carrying Out a Command from a Dialog Box

Text boxes, check boxes, option boxes, and list boxes are often referred to collectively as options. All dialog boxes have one or more options and two or more buttons (one of the buttons is always named Cancel, and it cancels a command without making any changes). You carry out a command with a dialog box in two steps:

1. Set the options the way you want them.
2. Choose a button to carry out the command.

   To cancel a dialog box without carrying out the command, you choose the Cancel button by pressing ESCAPE.

Step 1: Set the Options the Way You Want Them

Some options will already be set the way you want them, and you can leave these alone. Others will not be set the way you want them. These you must select and change.

Selecting Options

When you are in a dialog box, one of the options or buttons is selected. The selected option or button is indicated by the cursor. Every option in a dialog box has a bold letter which Works displays when you press the ALT key.

To select an option using the bold letter method

- Press ALT plus the bold letter for the option you want.

To select an option using the TAB and DIRECTION key method

- Press TAB or SHIFT+TAB to select the next or previous option in the dialog box.

Changing Options

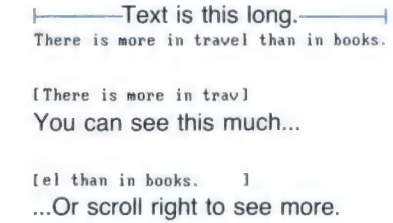
How you change an option depends on whether it is a text box, list box, check box, or option box. Remember that if an option is already set the way you want it, you don't need to change it. Select and change only the options that aren't set the way you want them.

To change a text box option

The name in front of a text box tells you what kind of information to provide. The text box may contain text, a number, or it may be blank. If it contains a number or text, it is initially selected. If it is blank you see a row of dots.

If the text box is blank, you can type in your own information. If the text box contains something, you can either type in new information to replace it, or edit what is there.

When you type in a text box, you aren't limited to the size of the box. When you type more text than can be shown in the box, the text moves or "scrolls" to the left.


Text is this long.
There is more in travel than in books.
[There is more in trav]
You can see this much...
[el than in books.]
...Or scroll right to see more.

To edit text in a text box

To	Press
Delete the selected text, if any	BACKSPACE
Delete the character to the left of the cursor if there is no selection	BACKSPACE
Delete the selected text, if any	DELETE
Delete the character that the cursor is on if there is no selection	DELETE

To select text in a text box, you hold down the SHIFT key while moving the cursor. For example, to select the character to the left of the cursor, press SHIFT + LEFT.

To move the cursor in a text box

To	Press
Move the cursor right one character	RIGHT
Move the cursor left one character	LEFT
Move the cursor to after the last character	END
Move the cursor to the first character	HOME

To change a list box option

The name above a list box tells you what the list contains. You change a list box by selecting one of the items in the list. The selected item is indicated by a highlight.

Like a text box, a list box may contain more items than you can see at one time. You can scroll the list box to see the other items.

To	Press
Select the first item if none is selected	DOWN
Move the selection up or down one item	UP or DOWN
Move to and select the first or last item in the list	HOME or END
Move up or down in the list	PAGE UP or PAGE DOWN
Select the next item in the list that begins with a particular letter	The letter you want

Some list boxes are shortcuts for typing in text boxes. For example, in the Open dialog box, when you select a filename from the Files in list box, Works automatically enters the filename in the File Name text box. This saves time and avoids typing mistakes.

To change a check box option

An X in a check box means that it is turned on. Nothing in a check box means it is off. A dash (-) in a check box means it is neither on nor off. For example, if some of the selected text in a file is bold and some of it is not bold, the Bold check box contains a dash.

To change a check box using the bold letter method

- Press ALT plus the bold letter in the option.

  This turns the check box on if it is off, and off if it is on.

Note If you use the bold letter method to select a check box option, it also changes the option. So to select and change a check box option, you press the ALT key and bold letter once, not twice.

To change a check box using the SPACEBAR

- Press the SPACEBAR.

  This turns the check box on if it is off, and off if it is on.

To change an option in an option box

A mark beside an option means that it is the selected option in the box. You can have only one option selected at a time.

To change an option box option using the bold letter method

- Press ALT plus the bold letter in the option.

  This selects the option if it is not selected.

Note If you use the bold letter method to select an option in an option box, it not only selects the option box but also selects that specific option within the box. This turns off the previously selected option in the box. So to select and change the option in an option box, you press the ALT key and bold letter once, not twice.

To change an option box option using the TAB and DIRECTION key method

- Press the DIRECTION keys to move between and select options in the option box.

Step 2: Choose a Button to Carry Out the Command

You choose buttons to carry out or cancel a command from within a dialog box. Most dialog boxes have just two buttons, named OK and Cancel. The OK button is the default button, indicated by bold brackets. The default button carries out the command. The Cancel button cancels a dialog box without carrying out the command.

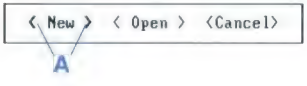
To choose the default button

- Press ENTER.

To choose the Cancel button

- Press ESCAPE.

All dialog boxes have a Cancel button, but some don't have an OK button. Instead they have two or more buttons with different names. This means that there is more than one way to carry out the command. For example, in the New dialog box, there are three buttons: New, Open, and Cancel. The New and Open buttons carry out the command in different ways — New creates a new file and Open opens an existing file. The New button is the default button and you can choose it just as you would choose an OK button: by pressing ENTER. You can also use the bold letter method to choose any of the buttons. When there are two or more buttons to carry out a command, each button has a bold letter which Works displays when you press the ALT key. You can also use the TAB and DIRECTION key method to choose any of the buttons.



A Bold brackets indicate the default button.

To choose any button using the bold letter method

- Press ALT plus the bold letter of the button you want.

To choose any button using the TAB and DIRECTION key method

1. Press TAB until the button you want to choose is selected.
   The cursor moves to the button and its brackets are bold.
   SHIFT + TAB moves to the previous option.
2. Press ENTER.

Messages in the Work Area

Works sometimes displays messages for you in a special kind of dialog box. These dialog boxes contain no options, just a message and one or more buttons.

Some messages are informational and contain a single OK button. For example, if you protect a spreadsheet and try to edit it, Works displays a message that tells you that the spreadsheet is protected. After you have read the message, press ENTER to choose the OK button and tell Works that you are ready to continue.

Other messages are questions that Works needs you to answer and they contain more than one button. For example, if you try to save a file with another file's name, Works asks you if you want to replace the existing file and presents you with three buttons: Yes, No, and Cancel. You answer the question by choosing the appropriate button.

2 Using Basic Skills

Some commands and tasks are common to all of the tools, while other commands are specific to the tool you are using.

The common commands are presented in this chapter. Because the commands are common to all of the tools, once you learn them, learning any (or all) of the tools will be much easier.

In this chapter, you will learn about:

- Working with Files
- Getting Assistance
- Printing a File
- Changing Works Settings
- Common Menus and Commands

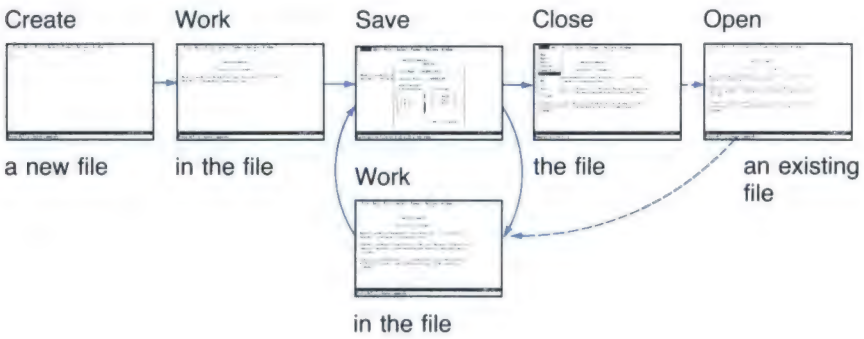
For quick reference, the common commands are summarized at the end of this chapter, under the heading, "Common Menus and Commands."

To find out about commands that are specific to each tool, see the reference chapter for each tool.

Note This chapter assumes that you have read Chapter 1, "Introduction to Basic Skills" and understand how to use dialog boxes. If you don't understand a procedure in this chapter, refer to Chapter 1.

Working with Files

Works stores your work in files. A file contains the text and numbers you type and any formatting that you do. A file can be a Word Processor, Spreadsheet, Database, or Communications file, depending on the tool you used to create it. You create, save, open, and close files using the File menu commands.

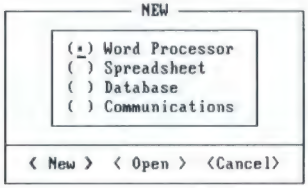


Creating a File

You create a new file in a tool using the New command.

To create a new file

1. From the File menu, choose New.
   Works displays the New dialog box.



2. In the New dialog box, select the tool you want to use.
3. Choose the New button.
   Works displays the screen for the tool you selected, and you can begin working in the file.

Note When you start Works, Works automatically chooses the New command for you and displays the New dialog box.

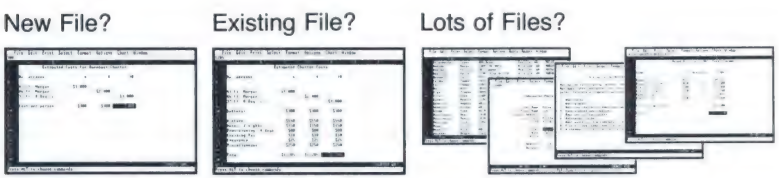
Saving a File

Until you save the file that you create, all the work you do is held in the computer's memory. This is temporary since exiting Works, a power interruption, or turning off your computer clears the computer's memory. That means any work that hasn't been saved is lost.

You store your work permanently by saving the file on a disk. Later you can open a file to work on it again. If you save your work frequently you can protect it from accidental loss. If there's a power interruption, you'll lose only the changes you made since your last save. If you save every 15 minutes, for example, you'll never lose more than 15 minutes of work.

Works has three commands for saving files:

- If you are working in a new file, use the Save As command to give the file a name and save it for the first time, or to save a new version of an existing file.
- If you are working in an existing file, use the Save command to save the file with your changes. The version of the file with your changes replaces the original version.
- In Works, you can have up to eight files open at once. Use the Save All command to save all open files. Just like Save, the versions of the files with changes replace the original versions.



Naming a File

When you create a file, Works automatically gives it a filename that identifies the type of file it is (Word Processor, Spreadsheet, Database, or Communications) and the sequence in which it was created. For example, if you create three new Word Processor files, Works names them WORD1.WPS, WORD2.WPS, and WORD3.WPS.

These filenames identify the files to Works, but they aren't very descriptive. When you save a file for the first time, you will want to give it a name that tells you what information the file contains.

A filename can be one to eight characters long, and have an optional one- to three-character extension.

You can use any character in a filename except for spaces and the following characters that have special meaning to DOS:

* ? / . , ; [ ] + = \ : | < >

The following table shows examples of filenames:

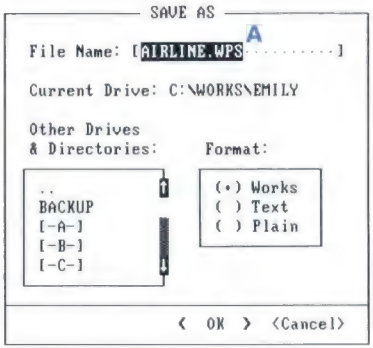
Acceptable filenames	Unacceptable filenames
1QTR	FirstQuarter (too long)
Story1	Story 1 (blank space)
10-87	10/87 (uses DOS character)

Extensions help you identify and organize your files. When you create a new file, or if you save and name a file without typing an extension, Works automatically adds the appropriate extension to the filename.

Extension	Tool
.WPS	Word Processor
.WKS	Spreadsheet
.WDB	Database
.WCM	Communications

To save and name a new file

1 From the File menu, choose Save As.
Works displays the Save As dialog box.



A Type a new filename here.

2 In the File Name text box, type a name for your file.

Remember, you don't have to type the extension — Works adds it for you.

3 Press ENTER.

Works saves the file to your current drive or directory.

Works always considers one of the directories on a drive to be the current directory (e.g., the WORKS FILES directory on the C drive). When you save a file with Save As, Works saves it in the current directory, unless you specify otherwise.

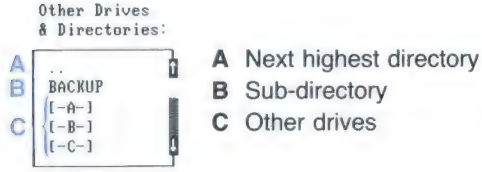
You can save a file to another directory or drive by first changing the current directory, then saving the file.

To change the current directory and drive, then save a file

1 From the File menu, choose Save As.

2 In the Other Drives & Directories list box, select the drive and/or directory you want to save your file to.

The drive and directory you select become the new current drive and directory.



3 Press ENTER.

4 In the File Name text box, type a name for your file.

5 Press ENTER.

Note If you change the current directory, the Save As command saves all new files to the new current directory (unless you specify otherwise). Files opened from other directories are saved to the drive or directory from which they were opened, regardless of what the current directory is.

To save a file to another drive or directory without changing the current directory

1. From the File menu, choose Save As.
2. In the File Name text box, type the complete pathname and filename.

   For example, to save the file LIZARDS to the C drive in the SAMPLE directory, type

   c:\Sample\lizards
3. Press ENTER.

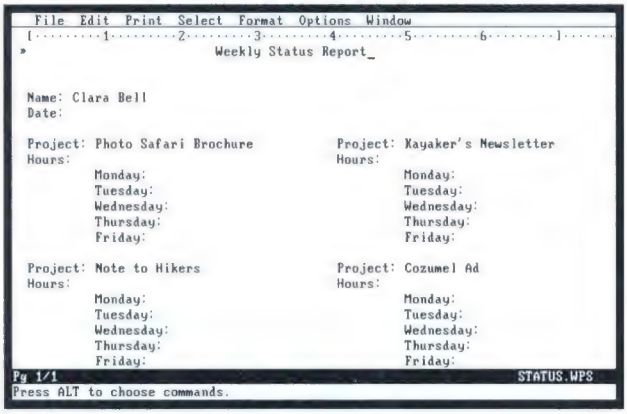
Tip

Another use for the Save As command

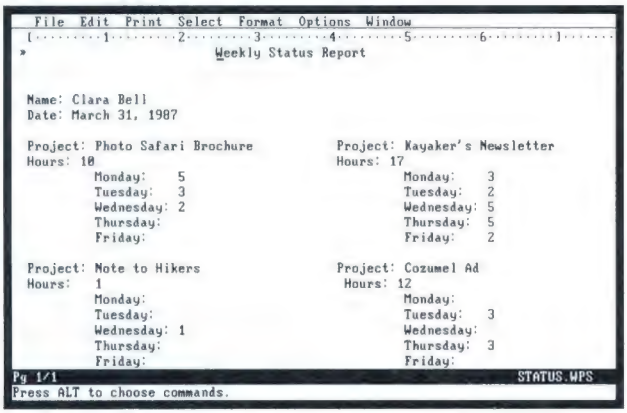
You can use Save As to make two versions of a file. For example, if you make a status report every week, you can create a file containing information that doesn't change (title and days of the week, for example), and leave the details blank. Each week, you can open the file, type in the details, and use Save As to save the file with a different filename. The original file remains unchanged and you can use it again next week.

1. Create a file.
2. Save it for the first time using Save As.
3. Make changes to the file.
4. Save it using Save As, but give the file a different name.

Now you have two files, the original file, which is unchanged, and the second file, which retains your changes and is saved on the disk under the new name.



Original File



New File

Tip

Specifying your own file extensions

You can save a file with your own extension rather than a Works extension. For example, if you have an old budget and a new budget, you might name the files BUDGET.NEW and BUDGET.OLD to identify them.

To specify your own extension

1. From the File menu, choose Save As.

2. In the File Name text box, type the filename and the new extension.

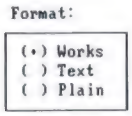
   To save the file without an extension, type the filename and a period (.).

3. Press ENTER.

Note If you save a file with a non-Works extension, the Open dialog box will not list it in the Files in list box.

To save a text file

Works tools save files in Works format. Files with a Works format contain all of your work and any formatting you have done. Some of the Works tools can also save files in text format. These files, called text or ASCII files, contain only the text and numbers from the file, and can be used with other programs that don't use Works format.



1. From the File menu, choose Save As.
2. Under Format, select Text or Plain.

   In the Spreadsheet and Database, you can save a file as a text file using the Text option. In the Word Processor, you can create two different kinds of text files using the Text and Plain options. The Plain option inserts a special character (CR) at the end of each line. The Text option inserts a special character (CR) at the end of each paragraph only.
3. Press ENTER.

To save an existing file

Once you have saved and named a file the first time, use the Save command to save any further changes you make to the file. Save saves the file with its original name to the drive or directory from which it was opened.

- From the File menu, choose Save.

The changes you made since the last time you saved are saved on the disk.

The file remains on the screen and you can continue to work on it.

Note If your file has not been saved before and you choose Save, Works automatically displays the Save As dialog box on the screen.

To save all files

In Works, you can have up to eight files open at one time. Instead of saving them one at a time, you can save all open files quickly using the Save All command.

- From the File menu, choose Save All.

For information on working with more than one file at a time, see "Switching Between Files" in this chapter.

Works Keeps a Backup Copy of Your Original

With the Settings command, you can tell Works to make backup copies of your files automatically. If you do, whenever you create a file and then save it, Works also saves a backup of it, gives it the same filename as the original, and puts it in a subdirectory named BACKUP.

If you lose your original file, you can restore it by selecting its backup from the BACKUP subdirectory. Only the changes since your last save are lost.

To open a backup file to restore an original

1. From the File menu, choose Open.
2. In the Other Drives & Directories list box, select BACKUP.
3. Press ENTER.
4. In the Files in list box, select the backup file you want to open.
5. Press ENTER.

   Works displays the backup copy of your file on the screen.
6. From the File menu, choose Save As.

   Works proposes the original filename.
7. In the Other Drives & Directories list box, select . .

   . . is the next highest directory; the one you were originally working in.

8. Press ENTER.
9. In the File Name text box, type the original filename.
10. Press ENTER.

    The file is now restored and exists in two places again: the BACKUP subdirectory and the directory you are working in.

Note Backup files take up space on your disk. If you are sure that you don't need one of these files, you can use the DOS ERASE command to delete it, or turn off the Backup check box using the Settings command on the Window menu. For more information on Works' settings, see "Changing Works Settings" in this chapter.

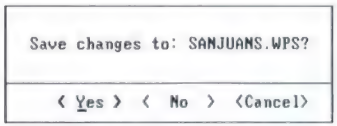
Closing a File

Use the Close command to remove your file from memory and clear it from the screen when you have finished working with it.

To close a file

- From the File menu, choose Close.

  If you have not saved the file, or have made changes since you last saved the file, Works asks if you want to save the changes.

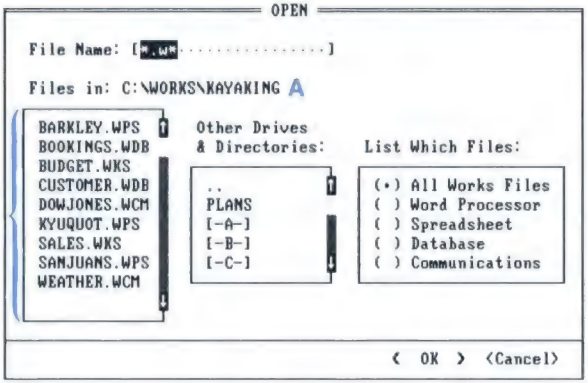


To	Choose
Close the file and save your changes	Yes
Close the file without saving your changes	No
Cancel the Close command	Cancel

Opening an Existing File

You use the Open command to display a file you have already created and saved. Whenever you open a file, it remains open until you close it with the Close command.

When you start Works, the New command is automatically chosen for you. To open an existing file when you start Works, choose the Open button in the New dialog box. Works displays the Open dialog box.



A Current drive and directory name
B Works files in current directory

To open a file, you can type its name in the File Name text box or select the file from the Files in list box. When you select a file from the Files in list box, Works automatically enters the filename in the File Name text box. This saves time and avoids typing mistakes.

To open an existing file using the Files in list box

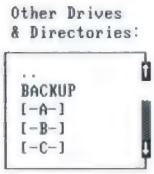
1. From the File menu, choose Open.
   Works displays the Open dialog box.
2. In the Files in list box, select the file you want to open.
3. Press ENTER.
   Works displays the file on the screen.

Opening files from other drives and directories

The Files in list box shows only the files in the current directory. If you type a filename in the File Name text box, Works looks for the file in the current directory. You can open a file from another drive or directory by first changing the current directory, then selecting the file from the list box.

To change the current drive and directory, then open a file

1. From the File menu, choose Open.
2. In the Other Drives & Directories list box, select the drive and directory for the file you want to open.



3. Press ENTER.

   Works lists the Works files in the new current drive and directory in the Files in list box.
4. In the Files in list box, select the file you want to open.
5. Press ENTER.

Note If you change the current directory, the Save As command saves all new files to the new current directory (unless you specify otherwise). Files opened from other directories are saved to the drive or directory from which they were opened, regardless of what the current directory is.

To open a file without changing the current drive or directory

1. From the File menu, choose Open.

   Works displays the Open dialog box.

2. In the File Name text box, type the complete pathname and filename.
   For example, to open the file LIZARDS on the C drive in the SAMPLE directory, type
   c:\sample\lizards
3. Press ENTER.

Note If you open a text file rather than a Works format file, Works asks if you want to open the file as a Word Processor, Spreadsheet, or Database file. Select the tool you want to use.

Listing Specific Files

The Files in list box shows only the files in the current directory whose filename extensions begin with "W." This includes all Works files whose default filename extensions are .WPS, .WKS, .WDB, and .WCM.

You can use the options under List Which Files to shorten files in the list so that the list displays only those files with a certain extension; for example, only the spreadsheet files with the extension .WKS.

To list the files in one tool

1. From the File menu, choose Open.
2. Under List Which Files, select a tool.
3. Press ENTER.

You can also make the Files in list box show any group of files you want by typing a wildcard filename into the File Name text box. A wildcard filename stands for a group of files that have similar filenames. For example, when you choose the Open command, the File Name text box initially contains *.W*. *.W* stands for all files whose filename extensions begin with "W," which is what the Files in list box shows.

In a wildcard filename, a question mark (?) stands for any single character in the same position as the question mark. An asterisk (*) stands for any number of characters in that same position. For example, S*.DOC stands for all files whose filenames begin with S and whose extensions are .DOC. The filename SALES?.* stands for all files whose filenames are SALES followed by a single character, such as SALES1.WKS and SALES2.TXT. The filename *.* stands for all files, regardless of filename or extension.

To list filenames using wildcards

1. From the File menu, choose Open.
2. In the File Name text box, type a filename using wildcards.
3. Press ENTER.

Tip ***Opening a file automatically when you start Works***

- You can open a file by typing

  works filename

  at the DOS prompt.

  Works starts and displays the file you wanted on the screen without displaying the New dialog box.

  For example, if you type

  works sales.wks

  at the DOS prompt, you automatically start Works and open the file SALES in the Spreadsheet.

  If you type

  works b:\labels\custlist

  Works starts and opens the file CUSTLIST from the LABELS directory on the B drive.

Note You can open up to eight files from the DOS command line. For example, if you type

works sales.wks budget.wks

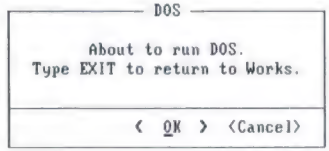
Works starts and opens SALES.WKS and BUDGET.WKS.

Leaving Works Temporarily

Use the DOS command to leave Works temporarily and work in DOS. In DOS, you can format additional diskettes, erase unnecessary files, copy and rename files, and perform other DOS tasks and run other programs. You can then return to Works right where you left off.

To leave and return to Works

1. From the File menu, choose DOS.
   Works displays the DOS dialog box.



2. Press ENTER.
3. Perform DOS tasks.
4. To return to Works, at the DOS prompt, type
   exit

Important Be sure to type *exit* to return to Works. If you type *works* again, Works tries to start a new Works session instead of returning you to your current session.

When you leave Works temporarily to work in DOS, do not delete any current Works files. If you delete these files, you will lose your current work.

Exiting Works

Use the Exit command to stop using Works.

To exit Works

- From the File menu, choose Exit.
  If you have made changes to a file and have not saved them, Works asks if you want to save your changes, just as it does when you choose Close.

Important Whenever you exit Works, it saves information about your work, your printer, and changes you have made using the Settings command in a file called WORKS.INI. Works uses this information the next time you start Works.

Switching Between Files

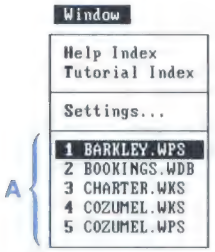
With Works, you can have up to eight files open at one time in the same tool or in different tools. You can work on a file, and, without closing that file, work on another. You switch easily between files — making changes, checking your data, and copying data between files — without taking the time to continually open and close your files.

Works displays one file at a time on your screen. The displayed file is called the active file. Whenever you choose New or Open from the File menu, you open another file. The file you open becomes the active file and replaces the original file on the screen. You use the Window menu to switch back to the original file.

To switch between files

Every open file is listed as a numbered command on the Window menu.

- From the Window menu, choose a numbered filename command.



A Filename commands

Getting Assistance from Within Works

As you learn Works and try tasks for the first time, you may have questions or need more information. You can get assistance at any time without interrupting your work:

- Check the message line — when a command is selected in a menu, a brief description of the command appears in the message line.
- Get Help — read information about a command or dialog box.
- Get a Learning Microsoft Works tutorial lesson — learn about a command or dialog box.

Getting Help

Works Help can display information on many topics. You can either have Works pick a topic for you, based on what you are currently doing, or you can pick a topic yourself from an index of all the topics.

To get Help at any time in Works

- Press F1.

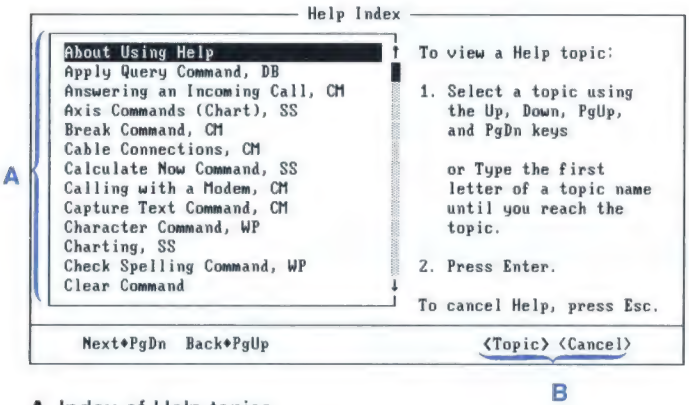
Works picks a Help topic for you based on what you are currently doing.

If you are using a command or dialog box, or if you select a command in a menu, pressing F1 displays the Help topic for that command. If you are doing a common task, such as entering a formula, pressing F1 displays the Help topic on formulas.

Using the Help Index Dialog Box to Pick a Help topic

The Help Index lists all Help topics.

If you chose the Help Index command, or if you aren't in the middle of a command or doing a common task when you press F1, Works displays the index of Help topics.


Help Index
About Using Help
Apply Query Command, DB
Answering an Incoming Call, CM
Axis Commands (Chart), SS
Break Command, CM
Cable Connections, CM
Calculate Now Command, SS
Calling with a Modem, CM
Capture Text Command, CM
Character Command, WP
Charting, SS
Check Spelling Command, WP
Clear Command
To view a Help topic:
1. Select a topic using the Up, Down, PgUp, and PgDn keys
or Type the first letter of a topic name until you reach the topic.
2. Press Enter.
To cancel Help, press Esc.
Next♦PgDn Back♦PgUp
<Topic> <Cancel>
A
B

A Index of Help topics

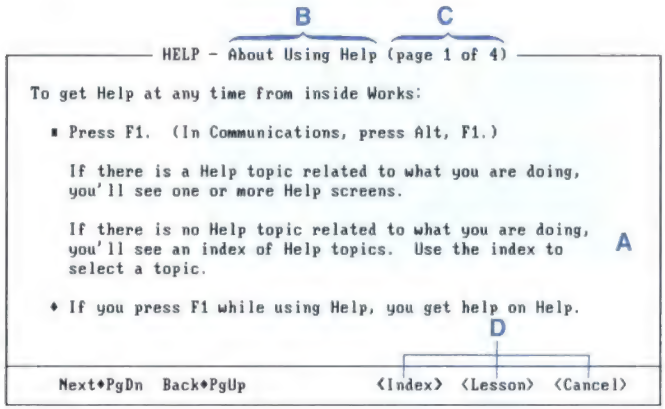
B Buttons for using the index

To use the Help Index and pick a Help topic

1. In the list box with the index of topics, select a Help topic.
2. Choose the Topic button.

If you have a computer that uses only diskettes, or if you chose not to copy Help to your hard disk during Setup, Works asks you to insert the Help diskette in your computer. You can press ENTER to choose the Topic button. As always, you can choose the Cancel button by pressing ESCAPE.

If you press F1 in the Help Index dialog box, Works displays the Help topic on how to use Help.


B
C
HELP - About Using Help (page 1 of 4)
To get Help at any time from inside Works:
▪ Press F1. (In Communications, press Alt, F1.)
If there is a Help topic related to what you are doing, you'll see one or more Help screens.
If there is no Help topic related to what you are doing, you'll see an index of Help topics. Use the index to select a topic.
A
♦ If you press F1 while using Help, you get help on Help.
D
Next♦PgDn Back♦PgUp
<Index> <Lesson> <Cancel>

A Text area for viewing topics
B Topic name
C Page numbers
D Buttons for using Help

To use the Help topic dialog box

If the topic you are reading is longer than one screen

Press	To
PAGE UP	See the previous screen
PAGE DOWN	See the next screen

To use the Help buttons

Press	To
Index	Display the Help Index
Lesson	See a tutorial lesson on the topic
Cancel	Cancel Help

The Index button is the default button. When you press ENTER, Works displays the Help Index. As always, you can choose the Cancel button by pressing ESCAPE.

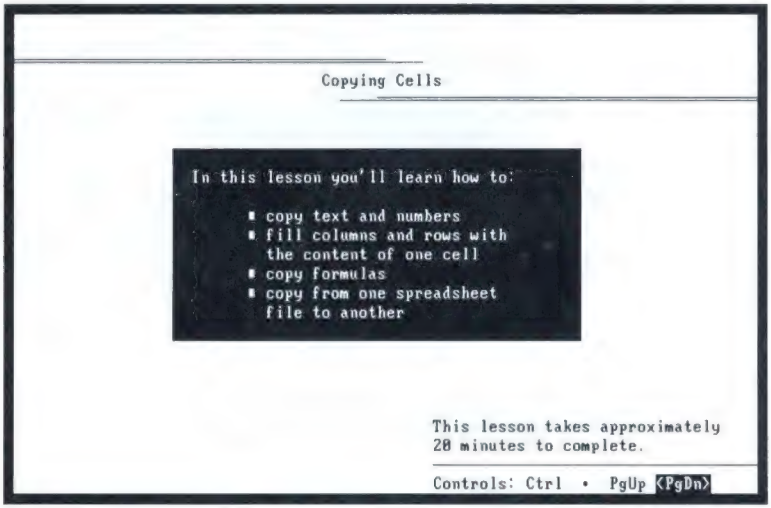
Note If there is no tutorial lesson, Works will not let you choose the Lesson button.

Getting a Tutorial Lesson

To get a tutorial lesson at any time in Works

1. Press SHIFT + F1.

   If a command is selected, or a dialog box is displayed, you get a tutorial lesson on that topic.


Copying Cells
In this lesson you'll learn how to:
• copy text and numbers
• fill columns and rows with the content of one cell
• copy formulas
• copy from one spreadsheet file to another
This lesson takes approximately 20 minutes to complete.
Controls: Ctrl • PgUp <PgDn>

   If you have a diskette system, or if you have a hard disk system and did not copy the tutorial to your disk using Setup, Works asks you to insert the tutorial diskette.

2. Once you're in a lesson:

   Go through the lesson using the PAGE DOWN key and following the instructions on the screen;

   Or jump right into the practices or summaries using the course controls.

3. To exit the tutorial, press CONTROL + Q.

If you press SHIFT + F1 when no command is selected and no dialog box is displayed, or if there is no tutorial available for the command, Works displays an index of tutorial lessons to choose from. In Communications you must press ALT then SHIFT + F1 if you are connected to another computer and want to see the Tutorial Index.

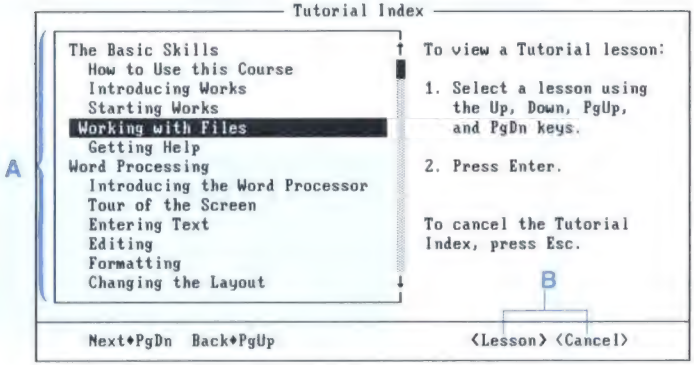
To learn more about the tutorial, see "Learning Microsoft Works" in the "Welcome to Microsoft Works" section of this manual and the tutorial lesson "How to Use This Course."

To use the Tutorial Index

The Tutorial Index lists all tutorial topics.

You reach the Tutorial Index in one of two ways:

- From the Window menu, choose Tutorial Index.
- You press SHIFT + F1 and there is no tutorial lesson related to what you're doing.



A Index of tutorial lessons
B Buttons for using the tutorial

If you have a diskette system, or if you have a hard disk system and did not copy the tutorial to your disk using Setup, Works asks you to insert the tutorial diskette.

From within the Tutorial Index dialog box, you can select a lesson or cancel the Tutorial Index.

To	Do this
Select a lesson	1 Use the UP, DOWN, PAGE UP, and PAGE DOWN keys to select a lesson. 2 Press ENTER.
Cancel the Tutorial Index	Press ESCAPE.

Printing a File

Before you print a file, you:

- Use the Setup program to tell Works what printer you are using.
- Create the file, using special formats, if desired.
- Accept the margins, headers, and footers that Works suggests — or specify a new layout.
- Accept the number of copies and other printing options that Works suggests — or specify other print options.

Telling Works What Printer You Are Using

You tell Works what printer you are using in the Setup program. Once you use Setup to specify a printer, you don't need to specify it again, unless you switch to another printer, or add a new one.

With Works you can print text on one printer and charts on another, or you can use the same printer to print both text and charts.

Note If you want to print charts, you must have a printer capable of printing graphics. Dot matrix printers can print both text and graphics; impact printers can print only text; plotters can print only graphics.

Printer description files

Printer description files give Works information about your printer's special features — fonts, sizes, styles, and print quality. When you run Setup, you copy these files from the Printer diskettes into the Works directory, where Works uses them to print.

Note The Works Printer diskettes have printer description files for most of the printers that Works can use. If Works does not have a printer description file for your printer, you can still print a copy of a text file by selecting the TTY printer description file in the Select Printer dialog box. TTY doesn't use all of your printer's special fonts, sizes, and styles.

To change printers or add a new one

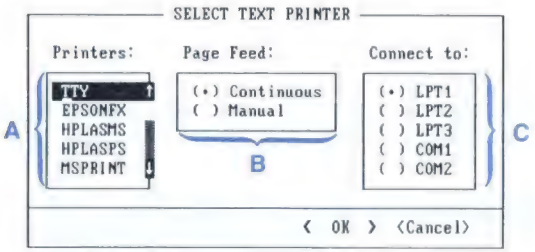
1. Copy printer description files using Setup.

   If you use more than one printer, copy a printer description file for each printer.

   If you want to stop using one printer and start using another, use the Setup program to copy the new printer description file and delete the old printer description file.

2 From the Print menu, choose Select Text Printer. (In Charting, choose Select Chart Printer.)

Be sure the printer that is selected under Printers is the one you want to use.



A The files you choose during Setup
B How the printer feeds pages
C Communication ports

Printers Contains the list of printers you selected during Setup.

Page Feed Indicates how the printer feeds pages.

Continuous feed means that papers are fed continuously, rather than one page at a time.

Manual feed means you insert each sheet by hand and tell the printer when to continue printing. Works tells you when to insert another page to print.

Connect to The computer uses a communication port to connect with a printer. You connect a parallel printer to port LPT1, LPT2, or LPT3. You connect a serial printer to port COM1 or COM2.

See your printer manual to determine what kind of printer you have, what port to connect your printer to, and any special settings that your printer requires.

Formatting a File

You use special formats to change a file's appearance. Each tool has its own set of formats. All formats appear when you print a file, but some, like fonts and size, are not displayed on the screen.

Styles are used to emphasize text. The styles bold, italic, and underline are available in all of the tools. Additional styles (strikethrough, superscript, and subscript) are available only in the Word Processor. When a style is applied to a character, the character is bold on the screen.

A font is a design applied to all characters and symbols in an alphabet. A font is also called a typeface. The font used in this manual is Times Roman. Some examples of different fonts are:

Courier

Helvetica

Times Roman

Font size indicates how large your characters will be when you print them. Font sizes are measured in points.

This is 6 point type.

This is 10 point type.

This is 14 point type.

This is 16 point type.

Fonts and sizes aren't indicated on the screen and can only be seen when you print the file.

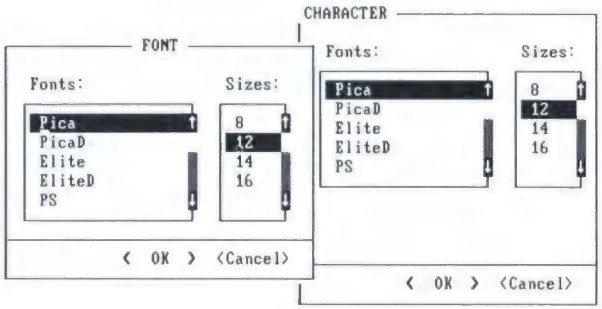
If you choose a style or font that is not available on your printer, Works prints the character as a plain character.

To change fonts and sizes

1. If you are in the Word Processor, choose Character from the Format menu.

   If you are in the Spreadsheet, the Database, Charting, or Reporting, choose Font from the Print menu.

Both commands display a dialog box that contains a list of fonts and a list of sizes that are available for your printer.



2. In the Fonts list box, select a font.

   Works displays the available sizes in the Sizes list box.

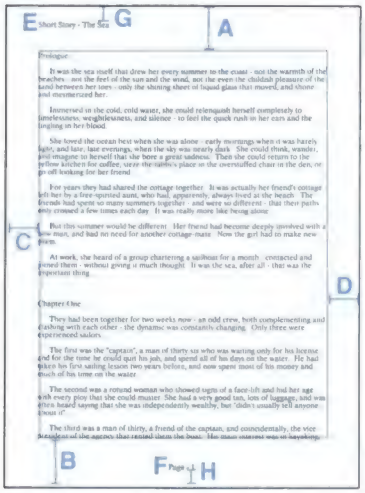
3. In the Sizes list box, select a size.
4. Press ENTER.

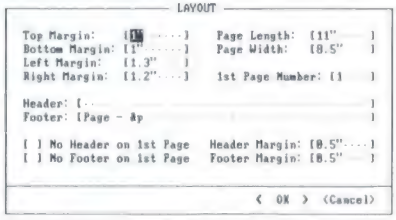
Note If you haven't specified a printer, Works uses the TTY printer. This prints only a 12-point Pica font and does not print styles.

For complete details on formatting files, see the reference chapter for each tool.

Specifying the Page Layout

You can specify the overall appearance of your printed file by choosing the Layout command from the Print menu. The Layout command tells Works what will be printed at the top and bottom of each page, where the text area and margins will be, and where the page numbers will print.




LAYOUT
Top Margin: [1"]
Bottom Margin: [1"]
Left Margin: [1.3"]
Right Margin: [1.2"]
Page Length: [11"]
Page Width: [8.5"]
1st Page Number: [1]
Header: [ ]
Footer: [Page - &p]
[ ] No Header on 1st Page
[ ] No Footer on 1st Page
Header Margin: [0.5"]
Footer Margin: [0.5"]
< OK > <Cancel>

A Top margin
B Bottom margin
C Left margin
D Right margin
E Header
F Footer
G Header margin
H Footer margin

Using the Layout command is optional. You can accept the responses that Works proposes, or you can change them.

Note The proposed responses in the Layout command dialog box depend on what Country option is selected in the Settings command dialog box. The proposed responses given below are for the US Country option.

Margins Works proposes 1 inch for the top and bottom margin, 1.3 inches for the left margin, and 1.2 inches for the right margin. You can specify any size margins your printer can accept.

Page Length and Page Width Works proposes an 11 inch by 8.5 inch page. You can specify any size paper that fits your printer.

1st Page Number Works proposes a first page number of 1. If you want the first page to have a different page number, change it to what you want it to be.

Header This determines what prints on the top of each page. You type the information as you want it to appear, and may substitute or include a code, like &d, which prints the date. Works proposes a blank header. For more information on headers, see "To format a header or footer" later in this chapter.

Footer This determines what prints on the bottom of each page. You type the information as you want it to appear, and may substitute or include a code, like &t, which prints the time. Works proposes the page number (Page - &p). For more information on footers, see "To format a header or footer" later in this chapter.

No Header on 1st Page and No Footer on 1st Page Turn on the appropriate check box to have the header or footer begin on the second page. This is useful if you want the first page to be a title page and don't want to clutter it up with headers and footers.

Header Margin and Footer Margin The header margin is the distance from the top of the paper to the top of the header. The footer margin is the distance from the bottom of the paper to the top of the footer. Works proposes 0.5 inch margins for the header and footer.

Note Layout information is stored with the file and remains with it until you change it. For example, once you change the page size for the file, every time you print it prints to the size you set. Changing the page size of one file won't affect any other files.

In the Word Processor, the header and footer have the same font and style as the last paragraph. In the Spreadsheet, the Database, and Reporting, the font is the same as the file, since each file can only have one font.

Works assumes that your units are in inches (in or ″). You don't need to type *in* or ″ in a text box, Works adds them for you.

If you want to enter centimeters (cm), you must type *cm* after the number. Works converts them to inches for you. If you want Works to assume centimeters instead of inches, you make the change using the Settings command on the Window menu. For more information, see "Changing Works Settings" later in this chapter.

To format a header or footer

In the Word Processor, you can create headers and footers with special fonts and sizes, using the Headers & Footers command on the Options menu. For more information, see the "Headers & Footers Command" topic in Chapter 4, "Word Processor Reference."

Using the options in the Layout dialog box, you can align parts of the header or footer to the left, right, or center, and include the page number, filename, date, or time.

To format headers and footers, use these codes:

To	Type
Align the characters that follow at the left margin	&l
Center the characters that follow between margins	&c
Align the characters that follow at the right margin	&r
Print the page number	&p
Print the filename	&f
Print the date	&d
Print the time	&t
Print a single ampersand (&) character	&&

You can include any or all of these codes in a single header or footer. For example, you would type

&lBudget&cPage - &p&r&d

to print this header:

Budget Page - 2 6/8/87

The proposed budget for the comming fiscal year appears to be excessive. Every division manager should review his/her budget request and cut 27 percent from administrative expenses, and 52 percent from travel allocations.

- Footers are automatically centered, unless you change the alignment.
- If you specify a header, it is automatically centered, unless you change the alignment.
- Unless you change Works Country settings:

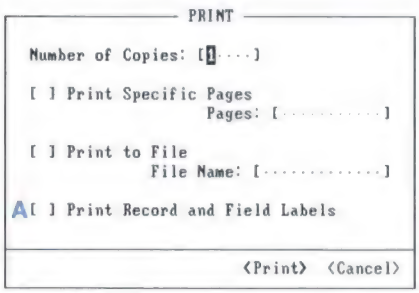
  Dates are printed in this format: 3/15/87.

  Times are printed in this format: 3:45 PM.

For information on Works settings, see "Changing Works Settings" later in this chapter.

Printing Your File

Use the Print command to give Works further information about the printing session and to print to a printer or a file.



A This option differs in each tool.

Number of Copies Works proposes 1 as the number of copies. If you want more copies, type the number in the text box.

Print Specific Pages This check box is normally off. If you want to print only certain pages, turn on the check box and type the page number or range of page numbers in the Pages text box.

For example, *3:5,7:9,11,12* prints pages 3, 4, 5, 7, 8, 9, 11, and 12.

Print Specific Pages is not an option in Charting, where you always print only one page.

Note Page numbers are based on the first page number you specify in the Layout command. For example, if you type 3 in the Layout command's 1st Page Number text box, your first page number will be 3. If you change the number in the Print dialog box's Pages text box to 4, the printer prints the second page in your file, and gives it a page number of 4.

Print to File This check box is normally off. If you want to print to a file, turn on this check box and type a filename in the File Name text box.

You print to a file so you can send your file to another computer.

The last option differs in each tool.

In	The option says
Word Processor	Draft Quality
Spreadsheet	Print Row and Column Labels
Database	Print Record and Field Labels
Reporting	Print All But Record Rows

For more information, see the "Print Command" topic in the reference chapter for each tool.

Note If you are using an impact printer when you carry out the Print command, Works tells you which print wheel to mount. Works also tells you which print wheel to mount if the font changes in a Word Processor file.

- Mount the print wheel as explained in your printer manual and press ENTER.

If an error occurs during printing

If an error occurs during printing, Works tells you and displays two buttons: OK and Cancel.

- To continue printing, correct the error and press ENTER.

  If you don't know how to correct the error, see Appendix B, "Printing Fonts, and Styles," and your printer manual.

- To cancel printing, press ESCAPE.

To cancel printing

To cancel printing in progress:

- Press ESCAPE.

  Works tells you that printing is interrupted and asks if you want to continue printing.

To resume printing, press ENTER.

To cancel printing, press ESCAPE again.

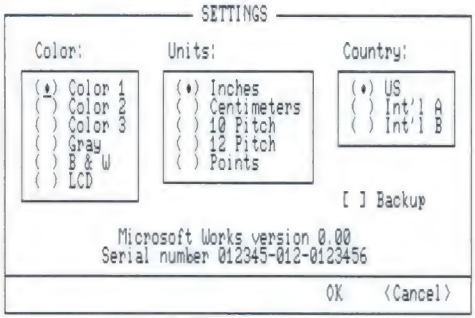
The printer may continue to print briefly after Works has stopped.

Changing Works Settings

You can change some of the settings that affect Works:

- The colors on your screen
- Units of measure
- Standard page size, currency symbols, and date format
- Whether or not Works makes backup files automatically

Use the Settings command on the Window menu to change Works settings:



Color Controls the colors on your screen. When you run Setup, you tell Works the kind of monitor and graphics card you're using. Works selects the color settings that are appropriate for your monitor.

If you have a color monitor

You can change your color settings if you have a color monitor. If your monitor is color but doesn't show bold letters when you press ALT, you must select Color 3.

To change color settings

- Under Color, select the option you want.

If you have a black and white monitor

- With an IBM CGA card, select B&W (Black and White).
- With another type of CGA card, try both the Gray and B&W options.

  If your monitor doesn't show shadows to the right and underneath menus and dialog boxes, try the other option.

If you have a monochrome monitor

With a Hercules graphics card, Works selects your colors for you; you cannot change them in the Settings dialog box.

Units Controls whether units of measure are converted to inches, centimeters, pitch, or points. Points and pitch are units of measure used in typesetting and printing. Points indicate type size; pitch is the number of characters to a horizontal inch.

You use units as follows:

- You specify a unit in the Layout dialog box in all of the tools and in the Print Labels, Paragraphs, and Tabs commands in the Word Processor.
- Works assumes inches and adds inches (″) for you in these dialog boxes.
- To specify a unit of measure different from inches you must type it in. Works converts it to inches for you. For example, if you type *5.08 cm*, Works converts centimeters to inches, and displays the measurement as 2 ″.
- You can change the unit of measure in the Settings dialog box, Works will assume the new unit of measure. For example, if you change the unit to centimeters, and type *2* ″, Works displays the measurement as 5.08 cm.

The units and their abbreviations are:

Unit	Abbreviation
Inches	in or ″
Centimeters	cm
Points	pts or p
Ten pitch	p10
Twelve pitch	p12

Examples:

For	Type
Inches	0.5 in or 0.5″
Centimeters	1.25 cm
Ten pitch	5 p10
Twelve pitch	6 p12
Points	36 pt

The conversions for these units are:

1″ = 2.54 cm = 10 p10 = 12 p12 = 72 pts

Country Controls the page size, currency symbols, and date format that Works assumes for all files.

Following are descriptions of the standards you can change with the options under Country.

- Page length and page width — the proposed responses in the Layout command.
- Currency symbol — used by the Dollar command in the Spreadsheet, the Database, and in Reporting.
- Date order — used whenever Works displays or prints a date or time. It determines whether dates are listed as Day, Month, Year, or as Year, Month, Day.

  For example, date order controls whether the date October 30, 1987 is printed as 10/3/87 or 3/10/87 (in short date form), or whether the date November 29, 1987 is printed November 29, 1987, or 29 November, 1987 (in long date form).
- Month name — used by the Time/Date command in the Spreadsheet, the Database, and in Reporting. It determines whether the names of months are printed in full, or as an abbreviation. For example, whether December, 1987 is printed December 1987 or Dec 1987.

Country	Standard
US	Page length: 11 inches Page width: 8.5 inches Currency symbol: Dollar sign ($) Date order: Month, Day, Year Month name: 3-letter
Int'l A	Page length: 11.69 inches Page width: 8.27 inches Currency symbol: Pound symbol (£) Date order: Day, Month, Year Month name: Full name
Int'l B	Page length: 29.7 centimeters Page width: 21.0 centimeters Currency symbol: Dollar sign ($) Date order: Day, Month, Year Month name: Full name

Backup Controls whether Works automatically makes backup copies of your files. You can change it at any time in the Settings command dialog box.

For more information on Backup files, see "Works Keeps a Backup Copy of Your Original" earlier in this chapter.

Common Menus and Commands

All tools have a File menu and a Window menu. The commands on these menus are identical, except for minor variations in the Word Processor.

All tools that you can print from have the same three commands on the Print menu and may have additional commands.

Most tools have an Edit, Select, Format, and Options menu, although the commands in these menus differ.

Each tool has additional menus.

The following table lists the uses of the common menus:

Use the	To
File menu	Create new files, open existing files, save and close files, and exit Works.
Edit menu	Copy, move, insert, and delete data.
Print menu	Select your printer, prepare and print a file.
Select menu	Go to and search for specified data.
Format menu	Change the appearance of selected data on your screen and the way it will print.
Options menu	Change the appearance of data, and the way it will calculate.
Window menu	Get Help, get the tutorial, switch between open files, and change Works settings.

The following tables list the common commands in the File, Print, and Window menus.

File Menu Commands

Description	See
New creates a new Works file.	Creating a File
Open opens an Existing File.	Opening an Existing File
Save saves an existing file.	Saving a File
Save As saves new files or variations of existing files.	Saving a File
Save All saves all open files.	To save all files
Close closes the active file.	Closing a File
DOS lets you work in DOS without exiting Works.	Leaving Works Temporarily
Exit exits Works.	Exiting Works

Print Menu Commands

These three Print menu commands are the same in each tool; the remaining commands differ between tools.

Description	See
Print prints the active file.	Printing Your File
Layout specifies the appearance of a page: headers, footers, margins, and page numbers.	Specifying the Page Layout
Select Printer selects the printer, port, and feed.	Telling Works What Printer You Are Using

Window Menu Commands

Description	See
Help Index provides an index of help topics.	Getting Help
Tutorial Index provides an index of tutorial topics.	Getting a Tutorial Lesson
Settings changes color settings, units of measure, standard page size, currency symbols, and date format.	Changing Works Settings
Filename commands activate open files.	Switching Between Files

The Word Processor

Welcome to the Word Processor. The Word Processor makes any kind of writing easier: from short memos and letters to ad copy, newsletters, reports, and even that novel you've been putting off. You can make ordinary documents look professional with headers, footers, and titles; italic, bold, or underlined text; and different fonts.

You can copy a chart from the Spreadsheet to your file or display information from the Database or Spreadsheet as a table in your file. You can customize standard documents and form letters by merging information from a Database file when you print.

The next two chapters explain how to use the Word Processor.

- Chapter 3, "Introduction to the Word Processor," explains basic word processing concepts and the steps for creating a document.
- Chapter 4, "Word Processing Reference," is an alphabetical reference for commands and tasks.

3 Introduction to the Word Processor

The Word Processor makes it easy for you to type a letter or report and even easier to go back and make changes without retyping the entire document.

Without getting out your scissors and tape, you can:

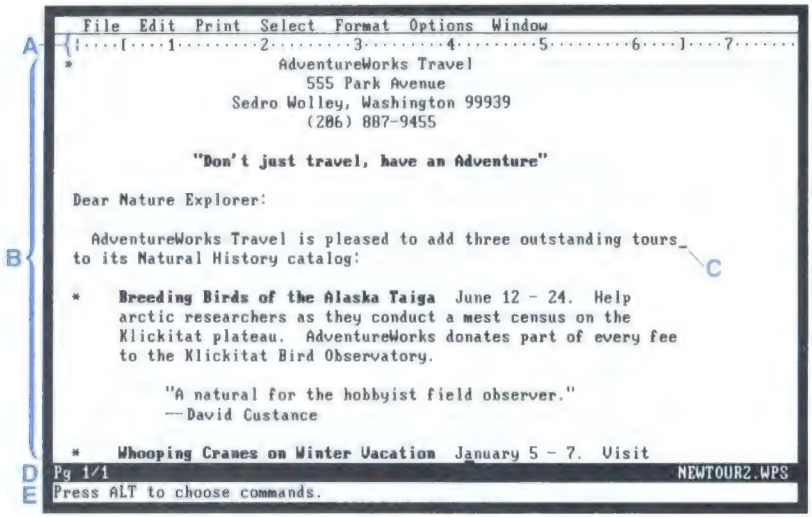
- Add, copy, or move text.
- Use different fonts, and different sizes and styles of type.
- Insert charts and tables from the Spreadsheet.
- Add headers, footers, and number pages automatically.
- Check your file for spelling errors.
- Create form letters or mailing labels, or fill in standard forms by merging information from the Database.

The best way to learn the Word Processor is to go through the Learning Microsoft Works tutorial; however, this chapter introduces you to some basic word processing concepts and explains generally how to create a document. Topics include:

- Looking at the Word Processor screen
- Typing text
- Editing text
- Formatting text
- Printing and page layout
- Other Word Processor features

Looking at the Word Processor Screen

The Word Processor screen looks like this:


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
Dear Nature Explorer:
AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:
* Breeding Birds of the Alaska Taiga June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.
"A natural for the hobbyist field observer."
--David Custance
* Whooping Cranes on Winter Vacation January 5 - 7. Visit
Pg 1/1
NEWTOUR2.WPS
Press ALT to choose commands.
A
B
C
D
E

A Ruler
B Work area
C Cursor
D Status line
E Message line

What you see on the screen looks very much like what you would see on your paper if you were typing.

Ruler The scale above the work area. Shows the margins, indents, and tab stops that are set for the selected paragraph.

Work Area You do all your typing, editing, and formatting in the work area.

Cursor The cursor shows you where text you type will appear. When you type text, the cursor moves to the right to make room for the new text.

Status Line Shows you the character formats applied to your selection, the current page number, the total number of pages, and the filename.

Message Line Describes a command or gives you information on how to complete a command in progress.

The next sections describe the general steps for creating a Word Processor file: first you type your text, then you select text you want to edit or format. When it looks just the way you want it, you print it.

Creating a Word Processor File

Typing Text

When you open a new Word Processor file, it is ready for you to begin typing text. Text is made up of characters. Letters, numbers, symbols, and spaces are all characters to the Word Processor. As you type, text appears on the screen. The cursor moves to the right to accommodate the new text. If you make a mistake while you are typing, you can use the BACKSPACE key to delete the mistake, then continue typing.

When you use a typewriter, a bell reminds you to press the return key to start a new line. With the Word Processor, the text you type automatically moves to the next line if it doesn't fit within the right margin mark. This is called wordwrap. Wordwrap lets you type a complete paragraph without pressing any keys to move to a new line. If you add or delete text, wordwrap automatically rearranges the lines of text in the paragraph to accommodate new text or to fill gaps created by the deleted text.

To begin a new paragraph, press the ENTER key. When you press ENTER, Works inserts a character called a paragraph mark. This mark signals the end of a paragraph for wordwrap. You should press ENTER only at the end of a paragraph. Works then starts a new paragraph on a new line for you.

Moving the Cursor and Moving Within a Word Processor File

Eventually, you'll type more text than Works can show on the screen at one time. As your text fills the screen, Works moves or "scrolls" the text at the top off the screen to show you the lines you're typing at the bottom.

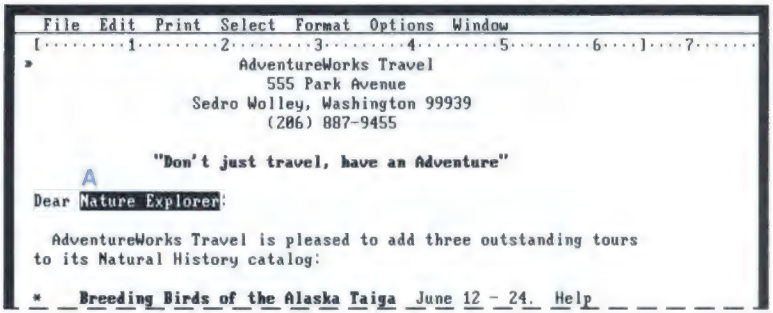
You scroll by moving the cursor with the movement keys. The movement keys are the DIRECTION keys (the UP, DOWN, LEFT, and RIGHT keys) that move the cursor one character right or left or one line up or down, the PAGE UP and PAGE DOWN keys that move the cursor toward the beginning or end of the file by "screens" of text, and the HOME and END keys that move the cursor to the beginning or end of the file.

You can also move the cursor by word, sentence, or paragraph. For a complete list of keys and what they do, see the "Keyboard" topic in Chapter 4, or the *Microsoft Works Keyboard Guide*.

Selecting Text

When you want to edit or format text, you tell Works what text you want to work with by selecting it.

To select text, you press and hold the SHIFT key and then press the appropriate movement keys; or, press F8, then the appropriate movement keys. The cursor becomes a highlight. Highlighted text, whether it's one character, an entire paragraph, or the whole document, is called a selection. For more information on selecting, see the "Selecting" topic in Chapter 4, "Word Processor Reference."


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
A
Dear Nature Explorer:
AdventureWorks Travel is pleased to add three outstanding tours
to its Natural History catalog:
* Breeding Birds of the Alaska Taiga June 12 - 24. Help

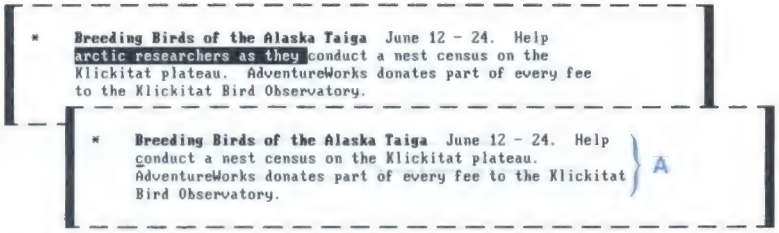
A Selected text

Editing

Editing means changing text you've already typed by deleting it, rearranging the order of paragraphs, correcting typing mistakes, or inserting new text. Before you edit text, you first select it.

Deleting Text

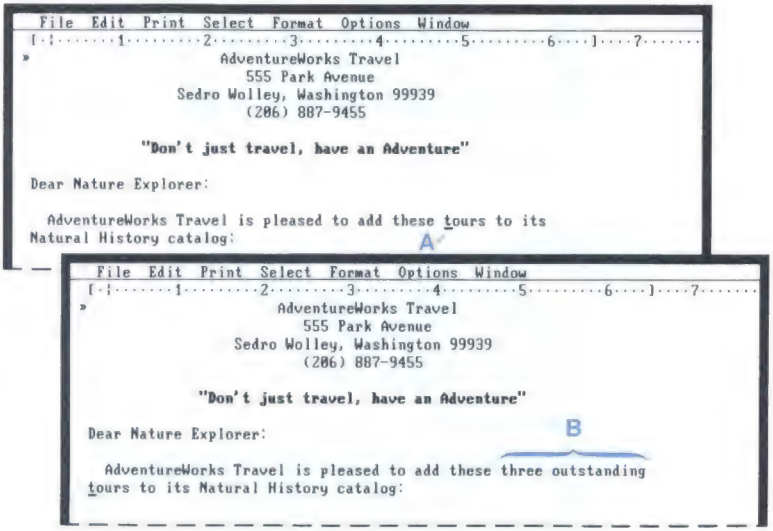
You press the BACKSPACE key to delete text one character at a time. To delete more than one character at a time, you select the text you want to delete and use the Delete command. After you delete text, Works adjusts lines that are affected by the deletion.


* Breeding Birds of the Alaska Taiga June 12 - 24. Help
arctic researchers as they conduct a nest census on the
Klickitat plateau. AdventureWorks donates part of every fee
to the Klickitat Bird Observatory.
* Breeding Birds of the Alaska Taiga June 12 - 24. Help
conduct a nest census on the Klickitat plateau.
AdventureWorks donates part of every fee to the Klickitat
Bird Observatory.
A

A Wordwrap readjusts lines to compensate for the deleted text.

Inserting New Text

You can insert new text in a file by moving the cursor to where you want to add text and then typing. Works inserts text to the left of the cursor. Works adjusts the lines of text in the paragraph to accommodate the new text.


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
Dear Nature Explorer:
AdventureWorks Travel is pleased to add these tours to its
Natural History catalog:
A
File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
Dear Nature Explorer:
B
AdventureWorks Travel is pleased to add these three outstanding
tours to its Natural History catalog:

A Cursor

B Text you type is inserted to the left of the cursor.

Moving and Copying Text

The Word Processor makes it easy to move or copy text from one location in a file to another.

To move or copy text, you first select the text you want to move or copy, then use the Move or Copy command. Next move the cursor to the new location. Move moves the text to the new location, and deletes it from its original location. Copy places a copy of the text in the new location, and keeps the original in its original location.

Undo

If you make a mistake — perhaps you just deleted a paragraph and you now have second thoughts — you can reverse your most recent action by using the Undo command. Undo restores text you've deleted or reverses formatting changes. Some actions you won't be able to undo. When you can't undo an action, you won't be able to choose Undo.

Formatting Text

Formats determine the appearance of your text on the screen and when you print. You can format text using different styles for emphasis, such as bold, italic, and underline. You can also use different fonts and sizes, or you can change line spacing, indents, or alignment.

Works applies some formats to individual characters and some formats to entire paragraphs. For example, you could make some text in a paragraph bold and some text italic. However, in that same paragraph, you couldn't have both single and double spacing, or some lines with left alignment and some with right alignment.

Works shows most formats on the screen so you can get an idea of what your text will look like when you print it. Works represents character formats on the screen by showing the text in bold letters. Works represents paragraph formats, such as line spacing, margins, indents, tab stops, and alignment, as close to their printed appearance as possible. Different fonts don't appear on your screen, but will appear when you print your file.

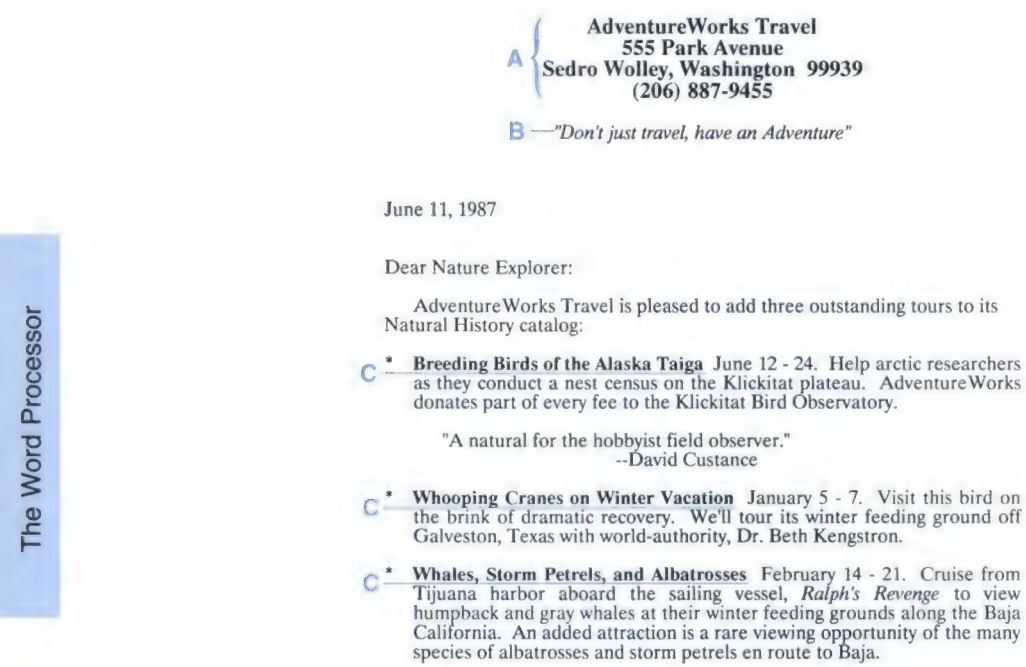
Character Formats

A character is any letter, number, or symbol you type. Works applies these formats to individual characters:

- Fonts and sizes
- Styles, such as bold, italic, or underline
- Superscript or subscript

Character formats can be applied to any amount of text: as little as one character or one word, or as much as the entire file. Characters can also have more than one format.

An example of some character formats on a printed page:


A
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
B —"Don't just travel, have an Adventure"
June 11, 1987
Dear Nature Explorer:
AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:
C * Breeding Birds of the Alaska Taiga June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.
"A natural for the hobbyist field observer."
--David Custance
C * Whooping Cranes on Winter Vacation January 5 - 7. Visit this bird on the brink of dramatic recovery. We'll tour its winter feeding ground off Galveston, Texas with world-authority, Dr. Beth Kengstron.
C * Whales, Storm Petrels, and Albatrosses February 14 - 21. Cruise from Tijuana harbor aboard the sailing vessel, Ralph's Revenge to view humpback and gray whales at their winter feeding grounds along the Baja California. An added attraction is a rare viewing opportunity of the many species of albatrosses and storm petrels en route to Baja.
For more information on any of these tours, please mail the enclosed postcard and we'll send you a brochure and price list.
Sincerely,
Ernestine Klaar
Tour Coordinator
1
AdventureWorks Travel
B "Don't just travel, have an Adventure"
6/27/87

A The heading is in a larger font size.
B These characters are italic.
C These characters are bold.

Paragraph Formats

Works recognizes a paragraph as any text followed by a paragraph mark. A paragraph is an important entity in the Word Processor because it is the unit to which Works applies certain formats. Works applies these formats to paragraphs:

- Indents — vary the margins for individual paragraphs.
- Alignment — determines whether lines in a paragraph are flush with the left margin, centered, flush with the right margin, or justified at both the left and right margins.
- Line spacing — controls the spacing between lines.
- Spacing before or after — automatically places a space instead of a blank line before or after a paragraph.
- Tab stops — specify precise placement of text for columns or tables.

Paragraph formats can be applied to any number of paragraphs. Paragraphs can also have more than one format.

An example of some paragraph formats on a printed page:

A
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455

"Don't just travel, have an Adventure"

June 11, 1987

Dear Nature Explorer:

B AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:

* **Breeding Birds of the Alaska Taiga** June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.

  C "A natural for the hobbyist field observer."
  --David Custance

* **Whooping Cranes on Winter Vacation** January 5 - 7. Visit this bird on the brink of dramatic recovery. We'll tour its winter feeding ground off Galveston, Texas with world-authority, Dr. Beth Kengstron.

* **Whales, Storm Petrels, and Albatrosses** February 14 - 21. Cruise from Tijuana harbor aboard the sailing vessel, *Ralph's Revenge* to view humpback and gray whales at their winter feeding grounds along the Baja California. An added attraction is a rare viewing opportunity of the many species of albatrosses and storm petrels en route to Baja.

B For more information on any of these tours, please mail the enclosed postcard and we'll send you a brochure and price list.

Sincerely,

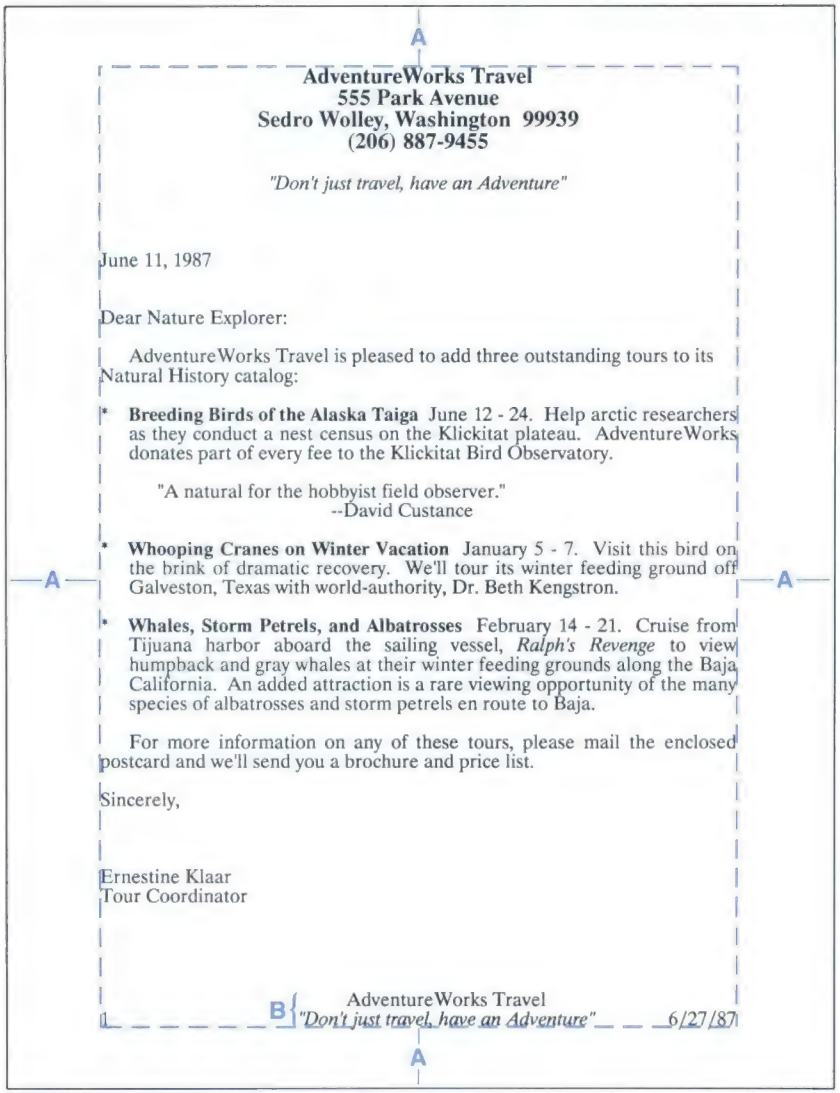
Ernestine Klaar
Tour Coordinator

A These paragraphs are centered.
B These paragraphs have a first line indent.
C This paragraph has a nested indent.

Printing and Page Layout

The Word Processor uses a page layout that is satisfactory for printing files in most situations. If you wish, however, you can change the following page layout settings before you print your file. These settings apply to your entire file:

- Margins — the amount of space between the edge of your paper and the text. You change margins with the Layout command.
- Headers, footers, and page numbers — print at the top or bottom of every page. Use the Layout command or the Headers & Footers command to add or remove headers and footers and to control the kind of information that prints in your headers and footers.
- Page breaks — automatically calculated; or, you can use manual page breaks at any time.


A
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
June 11, 1987
Dear Nature Explorer:
AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:
* Breeding Birds of the Alaska Taiga June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.
"A natural for the hobbyist field observer."
--David Custance
* Whooping Cranes on Winter Vacation January 5 - 7. Visit this bird on the brink of dramatic recovery. We'll tour its winter feeding ground off Galveston, Texas with world-authority, Dr. Beth Kengstron.
* Whales, Storm Petrels, and Albatrosses February 14 - 21. Cruise from Tijuana harbor aboard the sailing vessel, Ralph's Revenge to view humpback and gray whales at their winter feeding grounds along the Baja California. An added attraction is a rare viewing opportunity of the many species of albatrosses and storm petrels en route to Baja.
For more information on any of these tours, please mail the enclosed postcard and we'll send you a brochure and price list.
Sincerely,
Ernestine Klaar
Tour Coordinator
A
A
A
B
AdventureWorks Travel
"Don't just travel, have an Adventure" 6/27/87
A

A Margins apply to the entire file. Works calculates page breaks based on top and bottom margins.

B Footers are printed on every page.

Other Word Processor Features

The Word Processor includes other features that help you get the most out of your writing and the other Works tools. For details on these features, see Chapter 4, "Word Processor Reference."

Checking Your Spelling

It's easy to check for spelling mistakes with the Word Processor. The Check Spelling command lets you quickly proof your file against the Word Processor's built-in dictionary. You can easily correct misspelled words, and even get suggested corrections from Works. You can also store your own special terms and names in a personal dictionary.

Mailing Labels, Form Letters, and Forms

The Word Processor can extract information from a Database file and insert it at places you've specified when you print a Word Processor file. This lets you print mailing labels, create customized letters, and fill in pre-printed forms.

Exchange Information with Other Tools

Because Works is an integrated program, you can easily exchange information between the Word Processor and the other tools. You can insert charts or tables from the Spreadsheet, information from the Database, or information you've received with Communications. For more information, see Chapter 16, "Exchanging Information Between Tools."

4 Word Processor Reference

This is the reference chapter for the Word Processor. It contains information about the commands, about performing word processing tasks, and about other of the Word Processor's features.

Topics in this chapter are listed in alphabetical order.

A task topic describes the concepts and procedures for a task. Some task topics describe using one feature or command. Other task topics describe several related features or commands.

A command topic describes the purpose of a command and each of its options.

At the end of most topics is a list of related topics.

If you are unfamiliar with word processing or Microsoft Works, you should complete the Learning Microsoft Works tutorial. By working through the practices there, you will learn the basics and be introduced to some of the Word Processor's advanced features.

Aligning Paragraphs

A paragraph's alignment determines where Works positions text in relation to the left and right indents, rather than the margins. You can align paragraphs four ways: left, center, justified, and right.

A

AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455

"Don't just travel, have an Adventure"

B

June 11, 1987

Dear Nature Explorer:

AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:

C

* **Breeding Birds of the Alaska Taiga** June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.

"A natural for the hobbyist field observer."
--David Custance

C

* **Whooping Cranes on Winter Vacation** January 5 - 7. Visit this bird on the brink of dramatic recovery. We'll tour its winter feeding ground off Galveston, Texas with world-authority, Dr. Beth Kengstron.

* **Whales, Storm Petrels, and Albatrosses** February 14 - 21. Cruise from Tijuana harbor aboard the sailing vessel, *Ralph's Revenge* to view humpback and gray whales at their winter feeding grounds along the Baja California. An added attraction is a rare viewing opportunity of the many species of albatrosses and storm petrels en route to Baja.

For more information on any of these tours, please mail the enclosed postcard and we'll send you a brochure and price list.

B

Sincerely,

Ernestine Klaar
Tour Coordinator

A Center alignment
B Left alignment
C Justified alignment

Works applies alignment to an entire paragraph. To align just one line, such as a title, it must be a separate paragraph. Works uses left alignment unless you specify another.

To align paragraphs

1. Select the paragraph(s) you want to align.
2. From the Format menu, choose Left, Center, or Justified.

The left, center, and justified alignments are also available as options in the Paragraph dialog box.

To align paragraphs to the right

1. Select the paragraph(s) you want to align.
2. Press CONTROL+R.

Right alignment is also available as an option in the Paragraph dialog box.

For information on	See
Alignment as a paragraph format	Formatting Paragraphs
Aligning with tabs	Tab Stops and Tables
Indenting paragraphs	Indenting Paragraphs
Paragraph dialog box options	Paragraph Command
Setting margins	Margins
Selecting paragraphs	Selecting

Bold Command (Format Menu)

Shortcut key: CONTROL+B

The Bold command makes selected characters bold. If you have no text selected, then new characters typed at the cursor are bold.

For information on	See
Making characters bold	Formatting Characters

Center Command (Format Menu)

Shortcut key: CONTROL+C

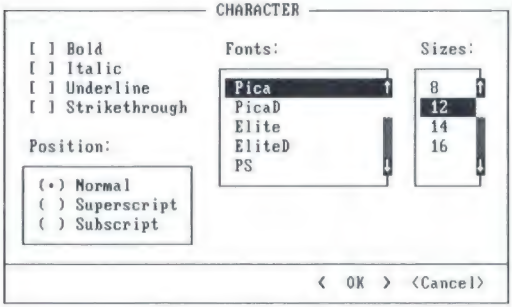
The Center command centers each line in the selected paragraph(s) between the left and right indents.

For information on	See
Centering paragraphs	Aligning Paragraphs

Character Command (Format Menu)

The Character command applies formats you choose to selected characters. If you have no selection, then the character formats are applied to new text you type at the cursor.

If you have one character selected or no selection, the Character dialog box shows the formats in effect for the selected character or the character above the cursor. If you have two or more characters selected, the Character dialog box settings are shown as neutral: check boxes have a dash (-) inside them and option and list boxes have nothing selected.



Bold Makes the selected text bold or removes bold format if text is already bold.

Italic Makes the selected text italic or removes italic format if text is already italic.

Underline Makes the selected text underlined or removes underline format if text is already underlined.

Strikethrough Makes the selected text print with a dashed line through it or removes strikethrough format if text already has it.

Position Positions selected text relative to the line of text in which it appears.

Normal	Returns text with superscript or subscript format to the normal position.
Superscript	Places text above the current line.
Subscript	Places text below the current line.

Fonts Lists the fonts available for your printer.

Sizes Lists the font sizes available for your printer.

For information on	See
Changing character formats	Formatting Characters
Characters	Characters

Characters

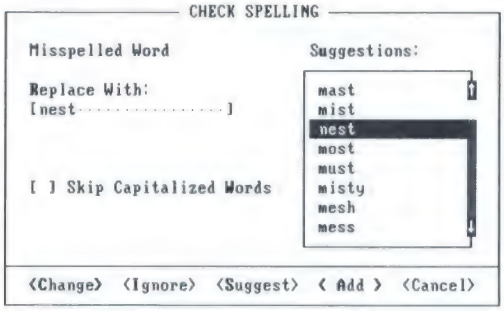
Characters are the letters, punctuation marks, numbers, and symbols that you type as text. You format characters with commands from the Format menu. Works applies these formats to characters:

- Font (type design) and size. The fonts you can choose are determined by your printer.
- Styles. Make characters bold, italic, underline, or strikethrough.
- Position. Raise (superscript) or lower (subscript) a character's position relative to the line of text in which it appears.

For information on	See
Procedures for formatting characters	Formatting Characters

Check Spelling Command (Options Menu)

The Check Spelling command searches for misspelled words in your file and lets you correct the spelling. You can also use Check Spelling to add entries to your personal dictionary.



Misspelled Word Tells you that Works has found a misspelled word and dislays the word in the Replace With text box. Works replaces the phrase "Misspelled Word" with phrases that describe other errors Works finds: incorrect or irregular capitalization or repetition of the same word.

Replace With Displays the misspelled word. If the same misspelling was corrected previously during the spelling check, Replace With displays the previous correction.

Suggestions Lists alternative spellings for the word in the Replace With text box. If you select a word from the list box, it is displayed in the Replace With text box.

Skip Capitalized Words Prevents Works from checking words in all capital letters. This is a useful option if your file includes acronyms you don't want checked.

Change Replaces the misspelled word with the text in the Replace With text box, and continues the spelling check. If you replace a misspelled word and the same misspelled word is found again, the same replacement word is proposed in the Replace With text box.

Ignore Ignores the misspelled word and continues the spelling check.

Suggest Displays a list of alternatives to the misspelled word in the Suggestions list box. When you select a word from the list box, it appears in the Replace With text box, where you can edit it if necessary.

Add Adds the word in the Replace With text box to the personal dictionary.

For information on	See
Dictionaries	Spelling
Procedures for checking spelling	Spelling

Copy Command (Edit Menu)

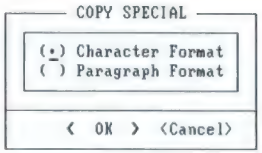
Shortcut key: SHIFT + F3

The Copy command copies selected text to another location in the file or to another Works file. Works automatically copies text and formats to the new location, leaving original text and formats behind.

For information on	See
Procedures for copying text	Copying Text

Copy Special Command (Edit Menu)

The Copy Special command copies specified paragraph or character formats of the selection to another selection. The original text and formats stay behind.



Character Format Copies all character formats from one selection to another.

Paragraph Format Copies all paragraph formats from one selection to another.

For information on	See
Copying character formats	Formatting Characters
Copying paragraph formats	Formatting Paragraphs

Copying Text

You can copy selected text from one location to another with the Copy command.

Works automatically copies the text and character formats to the new location, leaving the original text and formats behind. If the new location has text selected, Works replaces that text with the copied text. If the copied selection contains a paragraph mark, Works also copies the paragraph formats to the new location.

To copy text

1. Select the text you want to copy.
2. From the Edit menu, choose Copy.
3. Move the cursor to the new location.
   If you select text at the new location, the copied text replaces it.
4. Press ENTER

Note Before you press ENTER, you can cancel a copy by pressing ESCAPE.

To copy text between Word Processor files

You can copy text between two open Word Processor files.

1. Select the text you want to copy.
2. From the Edit menu, choose Copy.
3. From the Window menu, choose the name of the file you want to copy to.
   Works makes that file active.
4. Move the cursor to the new location.
   If you select text at the new location, the copied text replaces it.
5. Press ENTER.

Note Before you press ENTER, you can cancel a copy by pressing ESCAPE.

To repeat a copy

You can copy text once, then use a shortcut key to copy the same text to other locations.

1. Move the cursor to the new location.
2. Press SHIFT+F7.

Delete Command (Edit Menu)

Shortcut key: DELETE

The Delete command deletes selected text or the character above the cursor. Deleted text can be recovered using the Undo command.

Deleting Text

To remove something from a file, you delete it. You can delete any amount of text you want — from one character to entire paragraphs. To delete more than one character, you first select the text you want to delete. Immediately after the deletion, you can use the Undo command to recover deleted text.

To delete text

To delete	Do this
The character to the left of the cursor	Press BACKSPACE
The character above the cursor	Press DELETE
More than one character	Select the text, then choose the Delete command

To recover deleted text

- From the Edit menu, choose Undo.

For information on	See
Selecting text	Selecting

Double Space Command (Format Menu)

Shortcut key: CONTROL+2

The Double Space command gives selected paragraph(s) double spacing.

For information on	See
Changing line spacing	Spacing Between Lines and Paragraphs

Editing

Editing means changing text you've already typed. You can insert, delete, move, copy, and replace text with commands from the Edit menu or with shortcut keys.

When you edit text, you first select it or move the cursor to where you want to edit. Editing tasks are described under individual topics. For details and procedures on editing tasks, see the topics listed in the table below.

For information on	See
Adding new text	Inserting Text
Copying text	Copying Text
Deleting text	Deleting Text
Rearranging text	Moving Text
Replacing text	Searching and Replacing
Selecting text	Selecting Text

Fonts

A font is a type design applied to all characters and symbols in the alphabet. Each font can have different styles, such as bold or italic, and sizes, such as 10 point. Font, style, and size are character formats. On the screen, Works displays text in one font and size, and styles in bold letters.

Text you type in a new file is automatically formatted in the default font and size of your printer. You can format characters to print in any of the fonts available for your printer.

Works displays the fonts and sizes available for your printer in the Character dialog box. Works also displays formats in effect for either a selected character or for text you type at the cursor in this dialog box.

For information on	See
Changing the font, size, or style	Formatting Characters
Character dialog box	Character Command
Fonts and styles	Appendix B, "Printing, Fonts, and Styles"

Form Letters and Forms

With the Print Merge command you can use information from Database files to create:

- Form letters — you type one letter, and Works prints an individualized copy for each recipient from your Database file.
- Pre-printed forms — you create a file with standard text and individualized information. You position the text in the file to "fill in the blanks" of pre-printed forms. (These forms are available from many stationery, business supply, or computer stores.)

You follow these basic steps to create form letters or fill out pre-printed forms:

- Create a Word Processor file and type the text that remains the same for each document.
- Create a Database file containing the information that individualizes each form letter or form. Or, you can use the information in any existing Database file.
- In the Word Processor file, indicate where you want information to go by adding placeholders with the Insert Field command. Placeholders indicate every place in the form letter or form where Works will insert database information.
- Print the Word Processor file with the Print Merge command. Instead of printing just one copy of the form letter or form, Works prints multiple copies — one for each record in a database. As each form letter or form prints, Works substitutes each placeholder with information from a database record.

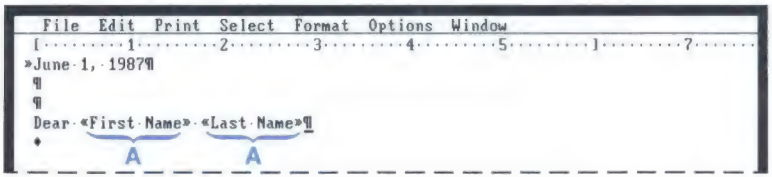
About Placeholders

When you use the Insert Field command, Works puts a placeholder in your file to represent where database information will be inserted when you print. Each placeholder represents the information in one field of a database record.

Works inserts the placeholder at the cursor. If you have selected text, the placeholder replaces the selected text.

Once you've inserted a placeholder in your file, you can select it just like any other text in your file. You can then copy, move, delete, or apply character formats to each placeholder as you wish.

Placeholders look like this:



A Placeholders

You can select each double-angle bracket character individually, but to select the entire placeholder, you must select both double-angle brackets and the database field name between them. Works uses the double-angle bracket characters to recognize a placeholder, so if you accidentally delete one, Works can no longer recognize the placeholder.

Since a placeholder contains the name of the database field and not the actual information, you may not see accurate line breaks on the screen. Wordwrap may not be the same for the actual information as it is for a placeholder.

Tip Instead of using the Insert Field command, you can type a placeholder directly into your file.

1. Press ALT+174 (on the numeric keypad) to type the left double-angle bracket character.
2. Type the name of the database field.
3. Press ALT+175 (on the numeric keypad) to type the right double-angle bracket character.

Don't type spaces or punctuation in the placeholder.

To create a file for form letters

1. Create a Database file with the information that will vary from letter to letter.

   If the Database file already exists, open it.
2. Create a Word Processor file for the form letter and type the text that will remain the same for all form letters.
3. Move the cursor to where you want to insert the first placeholder.
4. From the Edit menu, choose Insert Field.

   Works displays the Insert Field dialog box.
5. In the Databases list box, select the file you want to use.

   Works displays a list of the field names for that file in the Fields list box.
6. In the Fields list box, select the appropriate field name.
7. Press ENTER.

   Works inserts the placeholder in the Word Processor file.
8. Repeat steps 3 through 7 for each database field name you want to insert in your Word Processor file.
9. Format the text and placeholders as you wish with commands from the Format menu.
10. From the File menu, choose Save As.
11. In the File Name text box, type a name for the file.
12. Press ENTER.

To create a pre-printed forms file

To create a file for pre-printed forms, you follow the same general steps as for a form letter. The major difference is that you must carefully position the text and placeholders in the file to align with the blanks on the pre-printed form. After you have inserted text and placeholders, you use tab stops, indents, and line spacing to position them correctly.

- Use the Layout command to set the top, bottom, left, and right margins, and the page length and width to match the margins and size of the pre-printed forms. If you don't want a footer printed on each form, delete the proposed footer.
- To align the text and placeholders horizontally, type tab marks in front of them. Then use the Tabs command to set tab stops with the desired positions and alignments. For more information on tab stops, see the "Tab Stops and Tables" topic in this chapter.

- To align the text and placeholders vertically, use the Paragraph command. The spacing options in the Paragraph dialog box control the amount of vertical space between text and placeholders on different lines or in different paragraphs. For more information on spacing, see the "Spacing Between Lines and Paragraphs" topic in this chapter.

To print form letters or forms

Works prints one copy of the form letter or form for each visible record in the Database file, so before you print, make sure that all the records you want to print are visible in the Database file. If you want to print form letters or forms using only certain database records, use the Query command in the Database to hide records you do not wish to print.

Works prints copies of the form letters or forms in the same order as the records in the Database file. If you want to print form letters or forms in a particular order, such as alphabetical by last name or by postal code, use the Sort command in the Database to sort the records before you print.

1. Open the Database file if it's not already open.
2. Switch to the form letter or form file in the Word Processor.
3. Prepare your printer for printing with the special paper or forms you need.
4. From the Print menu, choose Print Merge.

   Works displays the Print Merge dialog box.
5. In the Databases list box, select the file you want to use.
6. Press ENTER.

   The Print dialog box appears.
7. Select the print options you want.
8. Press ENTER.

   As Works prints form letters or forms, the status line displays the total number of form letters to be printed and the number that have already been printed.

Tip You can also print just one copy of a form letter or form using the Print command. This is useful if you want to proof your letter or check to make sure the paper in your printer is aligned correctly. Print prints one copy of the file with placeholders instead of your database information.

To cancel printing

- Press ESCAPE to cancel printing at any time.

For information on	See
Layout command dialog box options	Printing a File, in Chapter 2
Margins	Margins
Print command dialog box options	Printing a File, in Chapter 2
Using the Database	Chapter 11, "Database Reference"

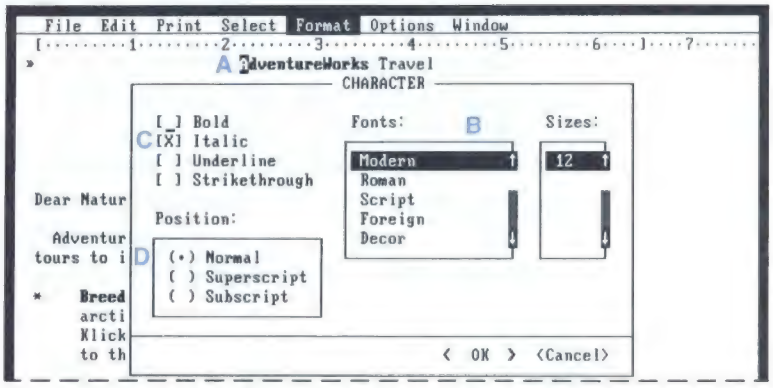
Formatting Characters

You use commands on the Format menu to change the appearance of characters. You can change a character's font and size, style (bold, italic, underline, or strikethrough), or position on a line (superscript or subscript).

You can select text and format it, or you can format before typing so that when you type, the text has those formats. You can apply more than one format to a character. For example, a character could be both italic and bold.

In a new file, characters you type have the default font and size, normal line position, and no styles assigned. On the screen, Works always displays characters in one font and size. Works represents styles and position in bold letters.

When you print your file, you'll see the correct fonts, sizes, styles, and positions. Use the status line or Character dialog box to see the formats in effect for your current selection.



A When you have one character selected, you can check its format in the Character dialog box.

B The font and size of the character are selected.

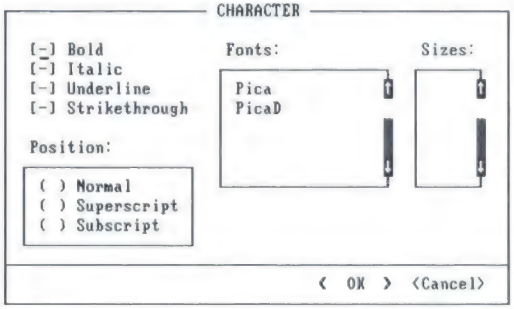
C The style of the character is checked.

D The position of the character is indicated.

All character formats are available in the Character command dialog box to allow you to change several formats at once. In addition, the most commonly used character formats are available as "shortcut" commands or keys.

To change character formats with the Character command

1. Select the character(s) whose formats you want to change.
2. From the Format menu, choose Character.



3. Turn on the Bold, Underline, Italic, or Strikethrough check boxes to select the styles you want to apply.

   Turn the check boxes off to remove styles.

4. Under Position, select the option you want.

   Superscript or Subscript raises or lowers the selected character(s) on a line. Normal returns the selected character(s) to the normal line position.

5. In the Fonts list box, select the font you want.

   The Sizes list box displays the sizes available for that font.

6. In the Sizes list box, select the size you want.

7. Press ENTER.

Note In the Character dialog box, you select only those format options you want to change. If you leave an option as it is, Works won't change that format. For example, you may want to underline a selection, half of which is already bold and half of which isn't. In the Character dialog box, you would turn on the Underline check box and leave the Bold check box as it is. The Bold check box is neutral, neither on nor off. Whenever you have more than one character selected, the Character dialog box options are neutral: check boxes have a dash (-) inside them and option and list boxes have nothing selected.

To change character formats using shortcut commands or keys

In addition to the Character command, you can use shortcuts for all the style formats and superscript and subscript. The shortcuts apply just a single style or position to the selection, leaving the other character formats unchanged. To remove individual formats or to change the font or size, you must use the Character command, not the shortcuts.

1. Select the character(s) whose formats you want to change.
2. Choose shortcut commands from the Format menu or press shortcut keys.

To change formats as you type

When you move the cursor to a new location and start typing, the new text has the same formats as the character above the cursor. You can change formats as you type so that the new text you type is different from the surrounding text.

1. Move the cursor to where you want to type the new text.
2. Use the Character command or shortcut commands or keys to change formats.

   Text surrounding the new text doesn't change.
3. Type the new text.
4. If you want to continue typing in the original format, use the Character or Plain Text command to change back to that format.
5. When you are done typing, move the cursor to where you want to work next.

To change formats for an entire file

You can change the character formats for an entire file before or after you have typed text.

1. If you already have typed text, press F8 five times to select the entire file.
2. Use the Character command or shortcut commands or keys to change formats.

   Any new text you type will have the new formats.

To check character formats

On the screen, Works always displays characters in one font and size, and styles and positions in bold letters. Use the status line or the Character dialog box to check character formats.

The status line shows the format of the first character in a selection, if there is a selection, or of the character above the cursor: bold (B), italic (I), underline (U), superscript (+), and subscript (=).

The Character dialog box shows all character formats:

1. Move the cursor to or select the character whose formats you want to check.
2. From the Format menu, choose Character.

   The Character dialog box shows the formats in effect for the selected character. If you have more than one character selected, the Character dialog box options are neutral.
3. Press ESCAPE to cancel the dialog box.

To copy just character formats to other text

If you have formatted some text in a way you like, you can copy the formats to other text.

1. Move the cursor to the character that has the formats you want to copy.

   If your selection is more than one character, Works copies only the first character's formats.
2. From the Edit menu, choose Copy Special.
3. Select the character(s) you want to copy the formats to.
4. Press ENTER.
5. In the Copy Special dialog box, select Character Format.
6. Press ENTER.

   Works copies the character formats from the first character to the other character(s), replacing any formats the other character(s) had.

For information on	See
Character dialog box	Character Command
Definition of character	Characters
Selecting text	Selecting
Using shortcut keys to format characters	Keyboard

Formatting Paragraphs

You use commands from the Format menu to change the way a paragraph looks. You can change a paragraph's alignment, spacing between lines, indents, tab stops, and the amount of space left before or after it.

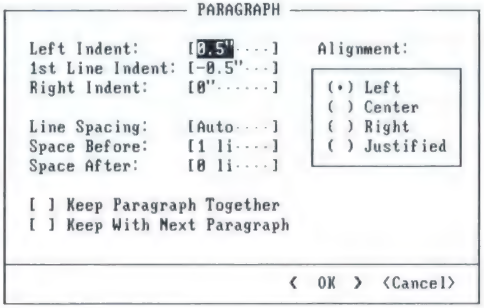
You can select a paragraph and format it, or you can format before typing so that when you type, the paragraph has those formats. In a new file, paragraphs you type have Normal format: single spacing, left alignment, no space before or after, and default tab stops.

Paragraph formats are stored in the paragraph mark at the end of each paragraph. If you delete a paragraph mark, the text joins with the next paragraph, taking on the formats for that paragraph.

All paragraph formats except tab stops are available in the Paragraph command dialog box to allow you to change several formats at once. In addition, the most commonly used paragraph formats are available as "shortcut" commands or keys.

To change paragraph formats with the Paragraph command

1. Select the paragraph(s) whose formats you want to change.
2. From the Format menu, choose Paragraph.



3. In the Left Indent, 1st Line Indent, and Right Indent text boxes, type the indents you want.
4. In the Line Spacing, Space Before, and Space After text boxes, type the number of lines of space you want between lines within the paragraph and before and after the paragraph.
5. Under Alignment, select Left, Center, Right, or Justified.
6. Turn on the Keep Paragraph Together check box if you want to prevent the lines in the paragraph from being split by a page break.
7. Turn on the Keep With Next Paragraph check box if you want to prevent the paragraph from being separated from the next paragraph by a page break.
8. Press ENTER.

Note In the Paragraph dialog box, you must select only those format options you want to change. If you leave an option as it is, Works won't change that format. For example, suppose you want to justify several paragraphs, some of which already have left indents and some of which don't. In the Paragraph dialog box, you would select Justified and leave the Left Indent text box as it is. The Left Indent text box is neutral or blank. Whenever you have more than one paragraph selected, the Paragraph dialog box options are neutral: text boxes are blank, option boxes have nothing selected, and check boxes have a dash (-) inside them.

To change formats using shortcut commands and keys

In addition to the Paragraph command, you can use shortcut commands for aligning, spacing, and indenting paragraphs. Left, Center, and Justified commands specify alignment; the Single Space and Double Space commands specify line spacing within the paragraph; Normal Paragraph returns paragraphs to Normal format. There are shortcut keys for right alignment, for one and a half line spacing, and for other paragraph formats, including nested and hanging indents. The shortcuts apply just an alignment, line spacing, or set of indents to the selected paragraph(s), leaving the other paragraph formats unchanged.

1. Select the paragraph(s) whose formats you want to change.
2. Choose shortcut commands from the Format menu or press shortcut keys.

To change formats as you type

When you move the cursor to a new location and start typing, new paragraphs have the same formats as the paragraph which contains the cursor. You change the formats as you type so that the new paragraphs you type are different from the surrounding paragraphs.

1. Move the cursor to where you want to create a new paragraph.
2. Press ENTER to create the new paragraph.
3. Use the Paragraph command or shortcut commands or keys to change the format.
4. Type the new paragraph.
5. Press ENTER to end the paragraph and create a new one.
6. If you want to return to the original format, use the Paragraph or Normal Paragraph command to change back to that format.

To format an entire file

You can change the paragraph formats for an entire file before or after you have typed text.

1. If you have already typed text, press F8 five times to select the entire file.
2. Use the Paragraph command or shortcut commands or keys to change the format.

   Any new paragraphs you create will have the new formats.

To check paragraph formats

If the Show Ruler command is on, the ruler shows paragraph indents and tab stops. To see all paragraph formats:

1. Move the cursor to or select the paragraph whose formats you want to check.
2. From the Format menu, choose Paragraph.

   The Paragraph dialog box shows the formats in effect for the selected paragraph. If you have more than one paragraph selected, the Paragraph dialog box options are neutral.
3. Press ESCAPE to cancel the dialog box.

To copy just paragraph formats to other text

If you have formatted some text in a way you like, you can copy the formats to other text.

1. Move the cursor to the paragraph that has the formats you want to copy.
2. From the Edit menu, choose Copy Special.
3. Select the paragraph(s) you want to copy the formats to.
4. Press ENTER.
5. In the Copy Special dialog box, select Paragraph Format.
6. Press ENTER.

   Works copies the paragraph formats from the first paragraph to the other paragraph(s), replacing any formats the other paragraph(s) had.

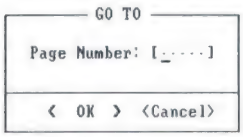
Additional procedures for formatting paragraphs are located under the specific formatting tasks.

For information on	See
Aligning paragraphs	Aligning Paragraphs
Definition of paragraph	Paragraphs
Indenting paragraphs	Indenting Paragraphs
Line spacing	Spacing Between Lines and Paragraphs
Moving the cursor	Moving Within a File
Setting tab stops	Tab Stops and Tables

Go To Command (Select Menu)

Shortcut key: F5

The Go To command displays a specific page in a file and selects the first character.

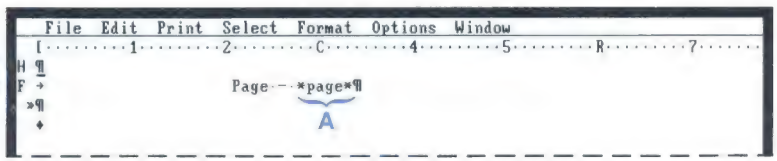


Page Number Specifies the page Works displays.

Headers & Footers Command (Options Menu)

The Headers & Footers command places a header and footer paragraph at the beginning of a file.

The header paragraph appears with an "H" and the footer paragraph appears with an "F" to the left of a paragraph mark. So you can easily center- and right-align text in a header or footer, both paragraphs contain a center-aligned tab stop set at the middle of the page, and a right-aligned tab stop set at the right margin. The footer paragraph also contains the text "Page" followed by the page number placeholder aligned at the center tab stop. You type and format additional text for your headers and footers in these paragraphs. When you print your file, headers and footers print on each page.



A Page number placeholder
B Header paragraph
C Footer paragraph

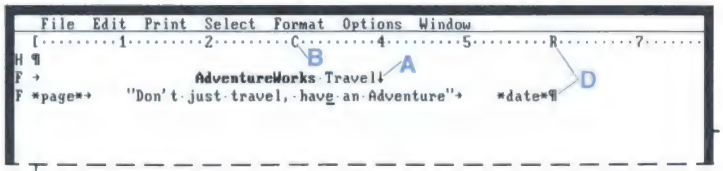
When you choose Headers & Footers, a mark appears beside it in the Options menu. A mark beside the command means header and footer paragraphs are displayed in the file and print on each page. You can hide the header and footer paragraphs and keep Works from printing them by choosing Headers & Footers again. If there is no mark beside the command in the menu, Works uses the header and footer information in the Layout command dialog box.

Note When Headers & Footers is turned on, the header and footer paragraphs appear as the first two paragraphs in your file. You must leave the paragraph marks there, even if you don't want both a header and footer. If you delete one of these paragraph marks, Works converts the first paragraph of regular text into the footer.

Creating Headers and Footers

You should use the Layout command for simple headers and footers. You can use the Headers & Footers command to create more complicated headers and footers that include:

- Character and paragraph formats — you format characters or paragraphs in headers or footers like you do any other characters or paragraphs, plus you can use additional formatting not available in the Layout command.
- Tab stops to align text precisely.
- Multiple lines within a header or footer paragraph.



"A natural for the hobbyist field observer."
--David Custance

* **Whooping Cranes on Winter Vacation** January 5 - 7. Visit this bird on the brink of dramatic recovery. We'll tour its winter feeding ground off Galveston, Texas with world-authority, Dr. Beth Kengstron.

* **Whales, Storm Petrels, and Albatrosses** February 14 - 21. Cruise from Tijuana harbor aboard the sailing vessel, *Ralph's Revenge* to view humpback and gray whales at their winter feeding grounds along the Baja California. An added attraction is a rare viewing opportunity of the many species of albatrosses and storm petrels en route to Baja.

For more information on any of these tours, please mail the enclosed postcard and we'll send you a brochure and price list.

Sincerely,

Ernestine Klaar
Tour Coordinator

1 C { AdventureWorks Travel *"Don't just travel, have an Adventure"* 6/27/87

A Use the end-of-line mark to begin a new line within a header or footer.

B Use the centered tab stop to align text in the center of a header or footer.

C Use character formats for different parts of the footer.

D The printdate placeholder is aligned on the right-aligned tab stop. The date prints when you print the file.

To create headers and footers

1. From the Options menu, choose Headers & Footers.
2. Move the cursor to the header or footer paragraph.
3. Type text for the header or footer.

   To have no header, delete any text in the header paragraph, but do not delete the paragraph mark.

   To have no footer, delete any text in the footer paragraph, but do not delete the paragraph mark.
4. To center text or align at the right margin, press TAB to use the preset tab stops.

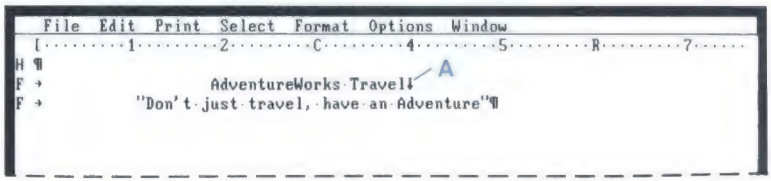
   To insert the page number, date, time, or filename, use the Insert Special command.
5. Format the header and footer with commands from the Format menu.
6. When you are finished creating your header or footer, move the cursor to where you want to begin work in your file.

To create a multiple-line header or footer

A header or footer consists of one paragraph, but you can insert line breaks within the paragraph for multiple-line headers or footers.

1. From the Options menu, choose Headers & Footers.
2. Move the cursor to the header or footer paragraph.
3. Type text for the header or footer. When you want to start a new line within the header or footer, press SHIFT + ENTER.

   Works inserts an end-of-line mark.



A End-of-line mark

Note If you have more than one line in your header or footer, you may need to increase the header or footer margin to accommodate the additional text. For more information on changing header or footer margins, see "Printing a File" in Chapter 2.

To hide headers or footers

1. From the Print menu, choose Layout.
2. In the Header text box, delete all text.
3. In the Footer text box, delete all text.
4. Press ENTER.
5. In the Options menu, be sure there is no mark beside Headers & Footers. If there is, choose the command. The mark should disappear.

For information on	See
Creating simple headers and footers	Specifying the Page Layout, in Chapter 2
Inserting special characters	Insert Special Command

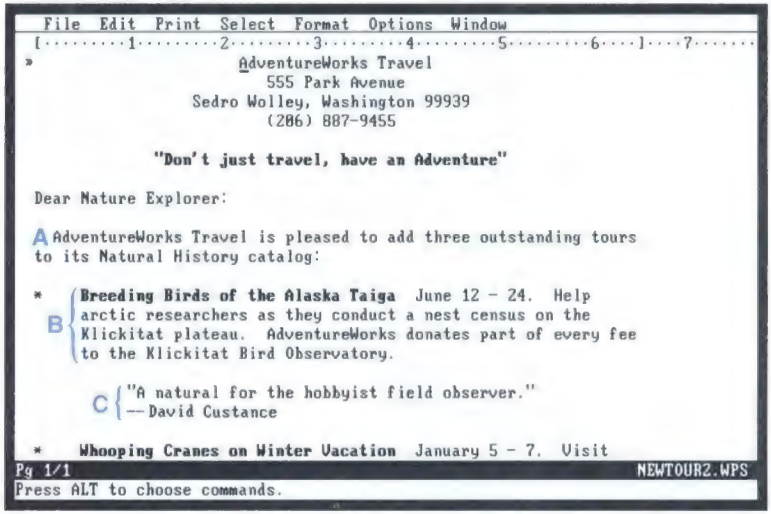
Indenting Paragraphs

An indent is the distance between the margins and the beginning or the end of the lines in a paragraph. You indent paragraphs for emphasis.

You can specify left and right indents for all lines in a paragraph, and a left indent for the first line of a paragraph. Each paragraph can have its own indents. Paragraphs you type in a new file have Normal format with no indents.

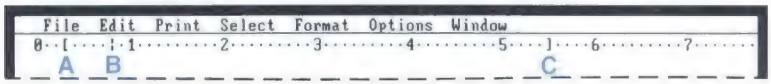
Here are some common uses for indents:

- Indent the first line of a paragraph
- Indent levels in an outline
- Indent a quotation with a "nested" indent
- Create numbered or bulleted lists with a "hanging" indent


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(286) 887-9455
"Don't just travel, have an Adventure"
Dear Nature Explorer:
A AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:
* B Breeding Birds of the Alaska Taiga June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.
C "A natural for the hobbyist field observer." --David Custance
* Whooping Cranes on Winter Vacation January 5 - 7. Visit
Pg 1/1
NEWTOUR2.WPS
Press ALT to choose commands.

A First line indent
B Hanging indent
C Nested indent

To see the indents for a selected paragraph, move the cursor anywhere in the paragraph. If the Show Ruler command is on, the ruler shows left and right indents with left and right square brackets ([ ]) and a first line indent with a first line indent marker (¦).



A Left indent marker
B First line indent marker
C Right indent marker

To indent the first line of a paragraph

1. Select the paragraph(s) you want to work with.
2. From the Format menu, choose Paragraph.
3. In the 1st Line Indent text box, type a positive measurement.
4. Press ENTER.

To indent all lines in a paragraph

1. Select the paragraph(s) you want to indent.
2. From the Format menu, choose Paragraph.
3. In the Left Indent or Right Indent text box, type a measurement.
4. Press ENTER.

To remove indents

1. Select the paragraph(s) you want to work with.
2. From the Format menu, choose Paragraph.
3. In the 1st Line Indent, Left Indent, or Right Indent text box, type *0*
4. Press ENTER.

To create a hanging indent

You use hanging indents to create numbered or bulleted paragraphs. The first line with the number or bullet (the bullet can be any character on your keyboard — asterisk, hyphen — it's up to you) aligns at the left margin and all other lines in the paragraph are indented the width of the default tab stop.

1. Type the first paragraph you want to have a hanging indent.

   If the paragraph begins with a number or a bullet character, press TAB to insert a tab mark between the number or bullet and the rest of the text.
2. Move the cursor anywhere in the paragraph.
3. Press CONTROL+H.

   Works indents the paragraph by the measurement for the default tab stop.
4. Press ENTER to begin your next hanging paragraph.

   When you're done typing your hanging paragraphs, press ENTER.
5. Press CONTROL+G.

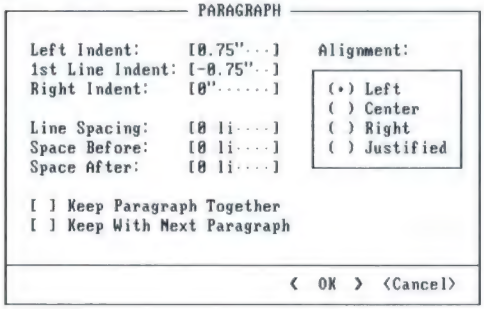
   Works "unhangs" the indent.

To create a custom hanging indent

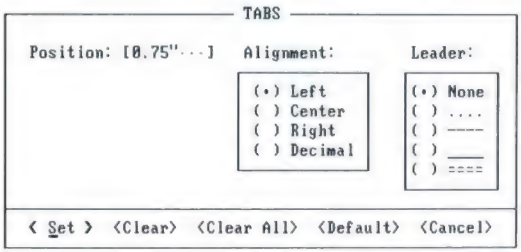
Use this method when you want a hanging indent measurement other than the width of the default tab stop.

1. Type the first paragraph you want to have a hanging indent.

   If the paragraph begins with a number or a bullet character, press TAB to insert a tab mark between the number or bullet and the rest of the text.
2. Move the cursor anywhere in the paragraph.
3. From the Format menu, choose Paragraph.
4. In the Left Indent text box, type a measurement equal to the amount you want the paragraph indented.
5. In the 1st Line Indent text box, type a measurement that is a negative number equal to the Left Indent.



6. Press ENTER.
7. From the Format menu, choose Tabs.
8. In the Position text box, type a measurement that equals the Left Indent measurement in the Paragraph dialog box.



9. Press ENTER.
10. Press ENTER to begin your next hanging paragraph.

    When you're done typing your hanging paragraphs, press ENTER.
11. From the Format menu, choose Normal Paragraph to return the paragraph to Normal format.

To create a nested indent

When you "nest" a paragraph, you indent from both the right and left margins to set it off from the text above or below it.

1. Type the first paragraph you want to have a nested indent.
2. Move the cursor anywhere in the paragraph.
3. Press CONTROL+N.

   The left indent increases by the default tab stop.
4. Press ENTER to begin your next paragraph.
5. When you're done typing your nested paragraphs, press ENTER.
6. Press CONTROL+M.

   Works "unnests" the indent.

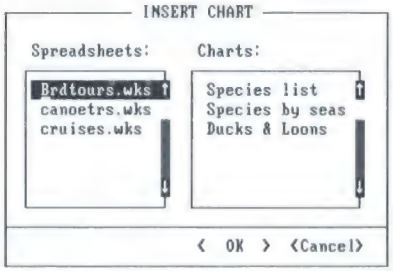
For information on	See
Default tab stops	Tab Stops and Tables
Indenting as a paragraph format	Formatting Paragraphs
Indenting with shortcut keys	Keyboard
The ruler	Ruler
Selecting paragraphs	Selecting
Setting and changing margins	Margins

Insert Chart Command (Edit Menu)

The Insert Chart command inserts a placeholder in your Word Processor file for the chart you specify. When you print the Word Processor file, the chart prints in the place you specified. The chart placeholder looks like this:

CHART FILENAME.EXT CHARTNAME

FILENAME.EXT is the name of the Spreadsheet file; CHARTNAME is the name of the chart.



Spreadsheets Lists the Spreadsheet files that are open.

Charts Lists the charts available for the Spreadsheet file you've selected in the Spreadsheets list box.

To insert a chart in a Word Processor file

1. Open the Spreadsheet file with the chart you want to insert.
2. Switch to the Word Processor file you want to insert the chart in.

   Works makes that file active.
3. Move the cursor to where you want to insert the chart.
4. From the Edit menu, choose Insert Chart.
5. In the Spreadsheets list box, select the spreadsheet file with the chart you want to insert.

   The charts for that Spreadsheet file are displayed in the Charts list box.
6. In the Charts list box, select the chart you want.
7. Press ENTER.

   Works inserts the chart placeholder in your file.

To specify the size of a printed chart

1. Move the cursor to the chart placeholder.
2. From the Format menu, choose Paragraph.

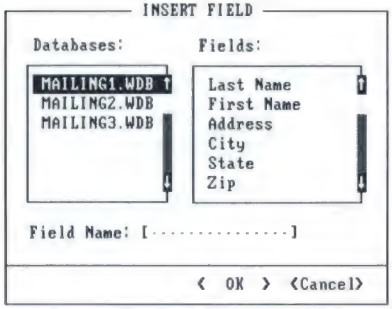
   Works displays the Chart dialog box with some options that are the same as those in the Paragraph dialog box. The Chart Height and Orientation options apply only to charts.
3. In the Chart Height text box, type a vertical measurement for the chart.
4. Under Orientation, select Portrait to print the chart with its bottom or x-axis parallel to the bottom of the page. Select Landscape to print the chart parallel to the left side of the page.
5. Press ENTER.

   When Works prints your file, it sizes the chart to fit in the space defined by the measurements in the Left Indent, Right Indent, and Chart Height text boxes.

For information on	See
Paragraph dialog box options	Paragraph Command

Insert Field Command (Edit Menu)

The Insert Field command inserts a placeholder for database information in a Word Processor file. When you print form letters or mailing labels with the Print Merge or the Print Labels command, the placeholder is replaced with the appropriate information from a Database file.



Databases Lists all open Database files. Select the database from which you want to merge information. The field names of the database then appear in the Fields list box.

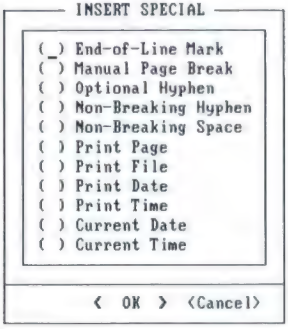
Fields Lists field names for the database selected in the Databases list box. Select the field name from which you want to merge information.

Field Name If the Database file you'll be using is not open, you can type the name of the field in the Field Name text box if you know what it is. Works will insert the name you type here. You must open the Database file before you print.

For information on	See
Creating mailing labels	Mailing Labels
Form letters and pre-printed forms	Form Letters and Forms
Placeholders	Form Letters and Forms

Insert Special Command (Edit Menu)

The Insert Special command inserts special characters in your file. When you select an option from the dialog box, Works inserts that special character at the cursor. You can also insert any of these special characters with their corresponding shortcut keys.



End-of-Line Mark (SHIFT + ENTER) Inserts an end-of-line mark and starts a new line but not a new paragraph.

Manual Page Break (CONTROL + ENTER) Inserts a page break mark and starts a new page.

Optional Hyphen (CONTROL + HYPHEN) Inserts an optional hyphen. This lets you designate words that can be hyphenated when they occur at the end of a line. An optional hyphen is visible only when Show All Characters is on or when the word is hyphenated at the end of a line.

Non-Breaking Hyphen (CONTROL + SHIFT + HYPHEN) Inserts a non-breaking hyphen. This keeps two words that must be separated by a hyphen from breaking at the end of a line. On the screen, the non-breaking hyphen looks identical to a regular hyphen.

Non-Breaking Space (CONTROL + SHIFT + SPACEBAR) Inserts a non-breaking space. This keeps two words that must stay together, such as a first name and last name, from being separated at the end of a line. On the screen, the non-breaking space appears as a regular space.

Print Page (CONTROL + P) Inserts the page number placeholder, *page*. Works inserts the page number when you print the file.

Print File (CONTROL+F) Inserts the filename placeholder, *filename*. Works inserts the filename when you print the file.

Print Date (CONTROL+D) Inserts the date placeholder, *date*. Works inserts the current date when you print the file.

Print Time (CONTROL+T) Inserts the time placeholder, *time*. Works inserts the current time when you print the file.

Current Date (CONTROL+;) Inserts the current date.

Current Time (CONTROL+SHIFT+;) Inserts the current time.

To insert special characters

1. Move the cursor to where you want to insert the character.
2. From the Edit menu, choose Insert Special.
3. In the Insert Special dialog box, select an option.
4. Press ENTER.

   Works inserts the special character in your file.

For information on	See
How special characters are displayed	Special Characters

Inserting Text

After you've typed text, you can insert new text anywhere in a file. Text you type at the cursor has the character formats of the character to the right or above the cursor.

To insert text

1. Move the cursor to where you want to type new text.
2. Type the new text.

   The cursor moves to the right to accommodate the new text.

For information on	See
Character formats	Formatting Characters
Moving the cursor	Moving Within a File
Typing text	Typing Text

Italic Command (Format Menu)

Shortcut key: CONTROL+I

The Italic command makes selected characters italic. If you have no text selected, new characters typed at the cursor are italic.

For information on	See
Making characters italic	Formatting Characters

Justified Command (Format Menu)

Shortcut key: CONTROL+J

The Justified command expands the spaces between words to fill out each line in the selected paragraph(s) so that it aligns with both the left and right indents. The last line of a paragraph is not justified.

For information on	See
Justifying paragraphs	Aligning Paragraphs

Keyboard

The following tables show what keys to press to perform various tasks. For some tasks you use key combinations, pressing and holding the first key, then pressing the next key. These key combinations are shown like this: SHIFT+F3. Many of the keys you press are shortcut keys for commands on the menu.

Function Keys

Name	Press
Help	F1
Tutorial	SHIFT+F1
Move	F3
Copy	SHIFT+F3

Name	Press
Go to	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Shrink selection	SHIFT + F8
Paginate Now	F9

Movement and Selecting Keys

To move around a file or to move the cursor, press the appropriate movement keys. To select text and extend the selection, move to the text you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys.

To move	Press
Left one character	LEFT
Right one character	RIGHT
Up one line	UP
Down one line	DOWN
Left one word	CONTROL + LEFT
Right one word	CONTROL + RIGHT
Up one paragraph	CONTROL + UP
Down one paragraph	CONTROL + DOWN
To beginning of line	HOME
To end of line	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Up one screen	PAGE UP
Down one screen	PAGE DOWN
To beginning of screen	CONTROL + PAGE UP
To end of screen	CONTROL + PAGE DOWN
Start EXTEND	F8
Quit EXTEND	ESCAPE
Extend selection	F8
Shrink selection	SHIFT + F8
Cancel selection	Any movement key

Character Formatting Keys

For this format	Press
Bold	CONTROL + B
Underline	CONTROL + U
Italic	CONTROL + I
Strikethrough	CONTROL + S
Superscript	CONTROL + SHIFT + =
Subscript	CONTROL + =
Plain text	CONTROL + SPACEBAR

Paragraph Formatting Keys

For this format	Press
Left alignment	CONTROL + L
Right alignment	CONTROL + R
Center alignment	CONTROL + C
Justified alignment	CONTROL + J
Nested indent	CONTROL + N
Unnest indent	CONTROL + M
Hanging indent	CONTROL + H
Unhang indent	CONTROL + G
Single space	CONTROL + 1
Double space	CONTROL + 2
1-1/2 space	CONTROL + 5
1 line before paragraph	CONTROL + O
0 lines before paragraph	CONTROL + E
Normal paragraph	CONTROL + X

Editing Keys

To	Press
Delete character left	BACKSPACE
Delete character or selection	DELETE
Move	F3
Copy	SHIFT + F3
Undo	ALT + BACKSPACE

Special Word Processor Keys

To insert	Press
Tab mark	TAB
Paragraph mark	ENTER
End-of-line mark	SHIFT + ENTER
Manual page break	CONTROL + ENTER
Optional hyphen	CONTROL + -
Non-breaking hyphen	CONTROL + SHIFT + -
Non-breaking space	CONTROL + SHIFT + SPACEBAR
Print page number	CONTROL + P
Print date	CONTROL + D
Print time	CONTROL + T
Print filename	CONTROL + F
Current date	CONTROL + ;
Current time	CONTROL + SHIFT + ;

For information on	See
Special characters	Special Characters
Inserting special characters	Insert Special Command

Left Command (Format Menu)

Shortcut key: CONTROL+L

The Left command aligns each line in the selected paragraph(s) flush with the left indent. Left is the default paragraph alignment.

For information on	See
Aligning paragraphs flush left	Aligning Paragraphs

Long Files

You can create documents of any length with the Word Processor. The maximum length is determined by the amount of space on your data diskette or on your hard disk. The following pointers will help you manage large Word Processor files:

- Instead of one long file, create several small files. Smaller files take less time to save, check spelling for, and search.
- Name the files so you can print them in their correct order, such as TOURS1.WPS, TOURS2.WPS, TOURS3.WPS, and so on.
- You may wish to divide the files according to sections or chapters. Then you can specify a different header and footer for each section or chapter.
- If you decide to divide your long file into smaller files, you can still number the pages consecutively when you print. To do this, print the first file, then switch to the second file and change the starting page number in the Layout command dialog box. Print the second file. Switch to the third file and change the starting page number in the Layout command dialog box, and so on.

For information on	See
Page numbering	Page Numbers

Mailing Labels

With Works you can print mailing labels from database information on any label designed to fit your printer.

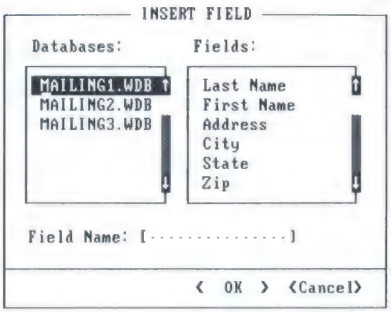
You follow these basic steps to create mailing labels:

- Create a Database file containing names, addresses, and other information to be printed on labels or open an existing Database file with the information.
- Create a mailing label file in the Word Processor, indicating where you want database information to go by inserting placeholders with the Insert Field command. Placeholders indicate every place in the mailing label where Works will insert database information. For more information about placeholders, see "About Placeholders" in the "Form Letters and Forms" topic.
- Type any text that you want to appear before or after the placeholders. Position the text and placeholders on individual labels using tab stops, indents, and line spacing.
- Change the options in the Layout command dialog box to correspond to the sheet of labels.
- With the Print Labels command, specify the size of the individual labels and the name of the database, and print the labels. Works prints one label for each record in the database, replacing placeholders with information from the database fields.

To create a mailing label file

1. Create a Database file with the information you want to use on your mailing labels.

   If the Database file already exists, open it.
2. Create a new Word Processor file.
3. From the Edit menu, choose Insert Field.



4. In the Databases list box, select the file you want to use.

   Works displays a list of the field names for that file in the Fields list box.

5. In the Fields list box, select the field name you want to insert in your mailing label file.

6. Press ENTER.

   Works inserts the placeholder in the Word Processor file.

7. Repeat steps 3 through 6 for each database field placeholder you want to insert in the mailing label file.

   As you insert placeholders, type any text, spaces, or punctuation you want before or after the placeholders. To precisely align the placeholders horizontally, type tab marks between the placeholders. Then set tab stops with the Tabs command at the desired positions. For more information on tab stops, see the "Tab Stops and Tables" topic in this chapter.

8. From the Print menu, choose Layout.

   In the Layout dialog box, enter these measurements:

In this text box	Type
Top Margin Bottom Margin	The measurement for the amount of blank space at the top and bottom of the sheet of labels. If you are using individual label sheets, rather than continuous sheets, and the labels extend to the top and bottom of the page, do not try to print on the top and bottom row of labels. Set the top and bottom margins to the height of one label.
Left Margin Right Margin	The measurement for the amount of blank space to the left of the left-most label and right of the right-most label. Most labels extend to the edge of the sheet they are on, in which case your left and right margins should be 0.
Page Length Page Width	The length and width of one sheet of labels. For continuous labels, the length is the measurement from one perforation to the next.
Footer	Delete text
Header Margin	0
Footer Margin	0

Note Mailing labels often have measurements in fractions of inches, like 1/4, 1/8, and 1/16. Type 0.25 for a 1/4-inch margin, 0.125 for a 1/8-inch margin and 0.0625 for a 1/16-inch margin.

9 Format the text and placeholders as you wish with commands from the Format menu.

Note When Works prints the mailing label text, it starts at the upper-left corner of each label. If you want the text indented slightly from the left edge of the labels, select the text and increase the measurement in the Left Indent text box in the Paragraph dialog box. If you want the text to start down slightly from the top edge of the labels, select the first line of text and increase the measurement in the Space Before text box in the Paragraph dialog box.

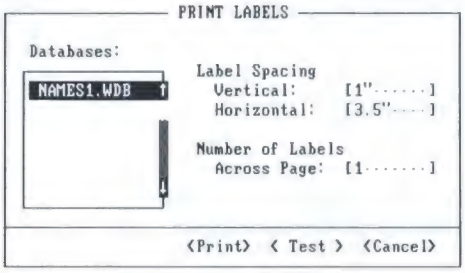
To print mailing labels

Works prints one label for each visible record in the Database file, so before you print, make sure that all the records you want to print are visible in the Database file. If you want to print labels using only certain database records, use the Query command in the Database to hide records you do not wish to print.

Works prints labels in the same order as the records in the Database file. If you want to print labels in a particular order, such as alphabetical by last name or by postal code, use the Sort command in the Database to sort the records before you print.

Note If information from the database is too long to fit on the label, Works "trims" the information at the right margin. To print all the information on the line, select all the text and placeholders and choose a smaller font size.

1 Open the Database file if it's not already open.
2 Switch to the Word Processor mailing labels file.
3 Prepare your printer for printing with the labels.
4 From the Print menu, choose Print Labels.
Works displays the Print Labels dialog box.



5. In the Databases list box, select the file you want to use.
6. In the Vertical text box, type the measurement from the top of one label to the top of the next label.
7. In the Number of Labels Across Page text box, type the number of labels across the page.

   If you have more than one label across each page, type the measurement from the left edge of one label to the left edge of the next label in the Horizontal text box.

   If you have just one label across each page, type the width in the Horizontal text box.
8. Choose the Test button to print a test row of labels.

   Works prints the first row of labels, then displays a message asking if you want all labels printed or another test row.
9. Choose the Test button to print another test row of labels after adjusting the position of the labels in the printer.
10. When you are satisfied with the position of the text on the labels, choose the Print button.

    Works displays the Print dialog box.
11. In the Print dialog box, select the desired print options.
12. Press ENTER.

To cancel printing

- Press ESCAPE to cancel printing at any time.

For information on	See
Placeholders	Form Letters and Forms
Print dialog box	Print Command
Using the Database	Chapter 11, "Database Reference"

Manual Pagination Command (Options Menu)

The Manual Pagination command turns Manual Pagination on and off. Works calculates page breaks automatically unless you turn Manual Pagination on. If Manual Pagination is turned on, you can paginate the file with the Paginate Now command.

A mark beside Manual Pagination on the menu means it is on.

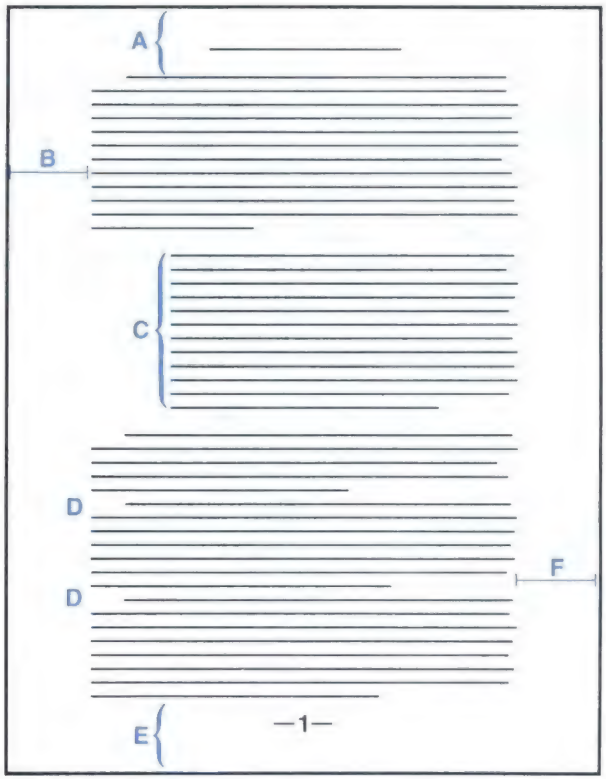
For information on	See
Manual pagination	Paginate Now Command
When to use manual pagination	Page Breaks and Pagination

Margins

The margin is the space between the edge of the paper and the text area. You set the margins for the entire file using the Layout command. To vary the amount of space between the text and margins for just part of the file you use indents.

Note the difference between margins and indents: an indent is space you add around a paragraph for emphasis, in addition to the margins. You set margins for the entire file; you use indents to emphasize a paragraph or two.

The ruler shows you the line length based on the margins set with the Layout command. The 0 mark on the ruler is placed at the left margin. The ruler represents the left and right indents with left and right bracket characters ([,]).



A Top margin
B Left margin
C This paragraph is indented from the margin.
D The first lines of these paragraphs are indented from the margin.
E Bottom margin
F Right margin

For information on	See
Changing indents	Indenting Paragraphs
Setting and changing margins	Specifying the Page Layout, in Chapter 2

Measurements

Works uses inches as the default horizontal unit of measure for tabs, indents, and margins. Works uses lines as the default vertical unit of measure for line and paragraph spacing.

When you enter measurements in text boxes, you don't need to type the abbreviation for the default unit of measure. Works does it for you. If you want Works to convert a number in another unit of measure to the current default, you just type the number with the abbreviation for the other unit of measure. For example, if the default unit of measure is inches and you enter a measurement of 2 cm, Works converts it to 0.79″.

The Settings command specifies the default unit of measure. If you change the unit of measure in the Settings dialog box, Works converts all measurements you enter to the new unit of measure.

With Works you can use these units of measure:

Unit	Abbreviation	Approximate equivalents
Inch	(in or ″)	1 in = 2.54 cm = 72 pts
Centimeter	(cm)	1 cm = .39 ″ = 28.35 pts
Point	(pts or p)	1 pt = 1/72 ″ = .035 cm
Ten pitch	(p10)	1 p10 = 1/10 ″ = 10 characters/in
Twelve pitch	(p12)	1 p12 = 1/12 ″ = 12 characters/in
Line	(li)	1 line = 1/6″

Points is the unit of measure commonly used in typesetting and printing. Pitch is the horizontal measure of the number of characters per inch. Typically, printers use 10 pitch (10 characters per inch) or 12 pitch (12 characters per inch).

For information on	See
Changing the unit of measure	Changing Works Settings, in Chapter 2
Points and pitch	Appendix B, "Printing, Fonts, and Styles"

Move Command (Edit Menu)

Shortcut key: F3

The Move command moves selected text to another location in the file. When you move text, Works copies the text to the new location, then deletes the text from the old location. If the new location has text selected, Works replaces that text with the moved text.

For information on	See
Procedures for moving text	Moving Text

Moving Text

You can move text from one location to another with the Move command.

Works automatically copies the text and formats to the new location, deleting the original text from the old location. If the new location has text selected, Works replaces that text with the moved text.

To move text

1. Select the text you want to move.
2. From the Edit menu, choose Move.
3. Move the cursor to the new location.

   If you select text at the new location, the moved text replaces it.
4. Press ENTER.

Note Before you press ENTER, you can cancel a move by pressing ESCAPE.

For information on	See
Copying text	Copying Text
Copying text to other Works files	Chapter 16, "Exchanging Information Between Tools"
Selecting text	Selecting

Moving Within a File

To get to text that you want to work with, you move the cursor with the movement keys. Moving to text that isn't visible on the screen is called scrolling. You also use movement keys for selecting text.

For more information on movement and selecting keys, see the "Keyboard" topic in this chapter.

Normal Paragraph Command (Format Menu)

Shortcut key: CONTROL+X

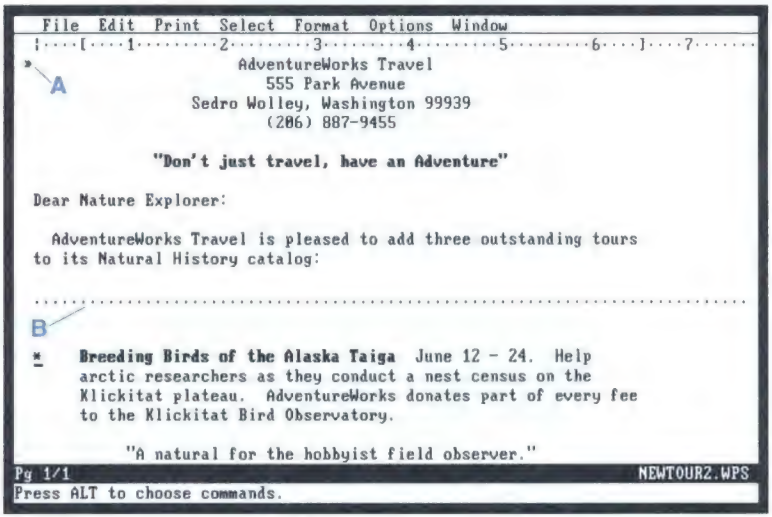
The Normal Paragraph command changes the format of the selected paragraphs to Works' default paragraph format: left alignment, single spacing, no space before or after, and left, right, and first line indents equal to zero. Normal Paragraph also removes any tab stops you've set.

For information on	See
Paragraph formats	Paragraphs

Page Breaks and Pagination

When you type text in a new file, Works automatically inserts a page break when you've typed enough text to fill a page. As you insert or delete text, Works adjusts the automatic page breaks. On your screen, automatic page breaks are marked with a double arrow in the left margin. When Works breaks pages, it automatically prevents awkward page breaks such as "widow" and "orphan" lines. A widow is the last line of a paragraph appearing alone at the top of a page; an orphan is the first line of a paragraph appearing alone at the bottom of a page. You can control automatic page breaks within and between paragraphs with the Paragraph command.

If you want, you can also insert manual page breaks. On your screen, manual page breaks are marked with a dotted line. When you print a file, Works breaks pages at these marks. When you insert a manual page break, Works repositions the automatic page breaks that follow it accordingly. You should insert manual page breaks between paragraphs, not in the middle of a paragraph.


File Edit Print Select Format Options Window
A
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure"
Dear Nature Explorer:
AdventureWorks Travel is pleased to add three outstanding tours to its Natural History catalog:
B
Breeding Birds of the Alaska Taiga June 12 - 24. Help arctic researchers as they conduct a nest census on the Klickitat plateau. AdventureWorks donates part of every fee to the Klickitat Bird Observatory.
"A natural for the hobbyist field observer."
Pg 1/1
NEWTOUR2.WPS
Press ALT to choose commands.

A Automatic page break
B Manual page break

To insert a manual page break

1. Move the cursor to the beginning of the paragraph where you want to break the page.
2. Press CONTROL+ENTER.

To delete a manual page break

1. Select the manual page break mark for the page break you want to delete.
2. Press DELETE.

When you delete a manual page break, Works repaginates your file with automatic page breaks.

To prevent page breaks within a paragraph

1. Select the paragraph(s).
2. From the Format menu, choose Paragraph.
3. Turn on the Keep Paragraph Together check box.
4. Press ENTER.

To prevent page breaks between two paragraphs

1. Select the first paragraph.
2. From the Format menu, choose Paragraph.
3. Turn on the Keep With Next Paragraph check box.
4. Press ENTER.

Using Manual Pagination

The Manual Pagination command turns Manual Pagination on and off. Works calculates page breaks automatically unless you turn Manual Pagination on. If Manual Pagination is turned on, you can paginate the file with the Paginate Now command.

Some situations for which you'll find manual pagination useful:

Editing from a printed copy

If you have printed a long file and want to make sure the page numbers on the printed copy stay the same as the page numbers on the screen, turn on Manual Pagination. This keeps Works from repaginating your file as you edit. You can then use the Go To command to move to a specific page number in the file that matches the printed draft.

Paginating a long file

Whenever automatic pagination is on, Works calculates page breaks as soon as you finish typing or carrying out a command. Normally, Works has enough time to keep page breaks accurate, but if you have a very long file, or if you have been typing for a long time, automatic pagination may take a little while to catch up. If you are working with a long file and want to be sure that page breaks are accurate, paginate the file with the Paginate Now command. When the command is completed, the page breaks are correct.

To turn manual pagination on and off

- From the Options menu, choose Manual Pagination.

  A mark beside Manual Pagination on the menu means it is on. If there is no mark, Manual Pagination is off.

To paginate a file

- From the Options menu, choose Paginate Now.

Page Numbers

You number pages in headers and footers using the Layout or Headers & Footers command. You can have no page numbers printed, change the starting page number in a file, and format page numbers.

To print the page number in a header or footer using the Layout command, you insert the code &p. Until you change it, the proposed footer in the Layout command is Page - &p, which prints the page number at the bottom of each page.

If you turn the Headers & Footers command on, Works inserts header and footer paragraphs at the beginning of your files, and prints these paragraphs instead of the Layout header and footer. To print a page number in a header or footer paragraph, you insert the special character *page*. Until you change it, the proposed footer paragraph is Page - *page*, which prints the page number at the bottom of each page.

In both cases, the page number looks like this: Page - 3

To insert or remove page numbers from the Layout header or footer

1. From the Print menu, choose Layout.
2. To insert a page number, type *&p* in the Header or Footer text box.
3. To remove a page number, select and delete &p in the Header or Footer text box.
4. Press ENTER.

To insert or remove page numbers from the header or footer paragraph

1. Press CONTROL+HOME to go to the beginning of the file.
2. To insert a page number, move the cursor to where you want the page number to print and press CONTROL+P.
3. To remove a page number, select and delete the special character *page* in the header or footer paragraph.

To change the starting page number

1. From the Print menu, choose Layout.
2. In the 1st Page Number text box, type the page number you want your file to begin with.
3. Press ENTER.

For information on	See
Creating complicated headers and footers	Headers & Footers Command
Creating simple headers and footers	Specifying the Page Layout, in Chapter 2

Paginate Now Command (Options Menu)

Shortcut key: F9

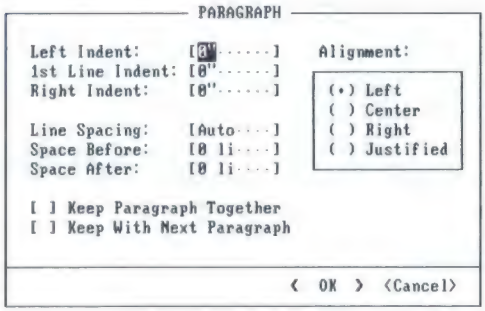
The Paginate Now command paginates your file when Manual Pagination is on.

For information on	See
When to use manual pagination	Page Breaks and Pagination

Paragraph Command (Format Menu)

The Paragraph command applies formats you choose to the selected paragraph(s). If you have no selection, then paragraph formats are applied to new text you type.

If you have one paragraph selected, the Paragraph dialog box shows the formats in effect for that paragraph. If you select two or more paragraphs, the Paragraph dialog box settings are shown as neutral: text boxes are blank, check boxes have a dash (-) inside them, and option boxes have nothing selected.



Alignment Determines paragraph's placement in relation to left and right indents.

Left	Aligns lines flush with the left indent.
Center	Centers each line between the left and right indents.
Right	Aligns lines flush with the right indent.
Justified	Aligns each line flush with the left and right indents. Aligns last line of a paragraph flush left.

Left Indent Indents a paragraph from the left margin. Enter the measurement you want between the left margin and the left edge of text.

1st Line Indent Indents the first line of a paragraph. Enter the measurement you want from the paragraph's left indent to the first line's indent. A positive measurement indents the first line. A negative measurement (type a minus sign before the number) moves the first line to the left of the left indent, for a hanging paragraph.

Right Indent Indents a paragraph from the right margin. Enter the measurement you want between the right margin and the right edge of text.

Line Spacing Determines the amount of vertical line spacing between lines. "Auto", or 0, is single spacing, with automatic adjustment for font size. "1" is six lines per vertical inch. Any other number, such as 1.5, 2, or 3, puts additional space between lines, in units of 1/6".

Space Before Determines the amount of space before a paragraph. Type a number. Works assumes lines unless you specify a different unit of measure.

Space After Determines the amount of space after a paragraph. Type a number. Works assumes lines unless you specify a different unit of measure.

Keep Paragraph Together Prevents an automatic page break between lines within a paragraph. Works automatically makes sure that a paragraph does not break on its first or last line.

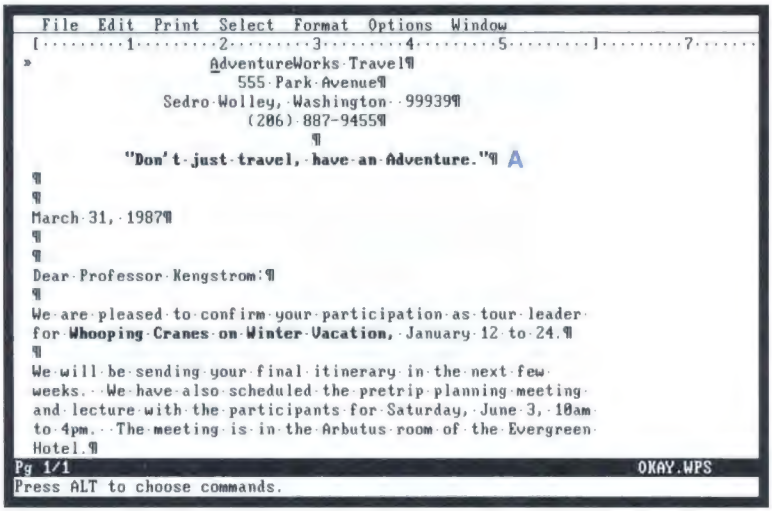
Keep With Next Paragraph Prevents an automatic page break between the selected paragraph(s) and the next paragraph.

Note When you have a chart placeholder selected, the Paragraph dialog box looks different. The "Insert Chart Command" topic describes the differences.

For information on	See
Aligning paragraphs	Aligning Paragraphs
Changing margins	Margins
Copying paragraph formats	Formatting Paragraphs
Indenting paragraphs	Indenting Paragraphs
Normal Paragraph format	Paragraphs
Selecting paragraphs	Selecting

Paragraphs

In Works, a paragraph is text of any length followed by a paragraph mark. You enter a paragraph mark by pressing ENTER. Works treats all the characters you've typed since the previous paragraph mark as one paragraph.


File Edit Print Select Format Options Window
AdventureWorks Travel¶
555 Park Avenue¶
Sedro Wolley, Washington 99939¶
(206) 887-9455¶
¶
"Don't just travel, have an Adventure."¶ A
¶
¶
March 31, 1987¶
¶
¶
Dear Professor Kengstrom:¶
¶
We are pleased to confirm your participation as tour leader
for Whooping Cranes on Winter Vacation, January 12 to 24.¶
¶
We will be sending your final itinerary in the next few
weeks. We have also scheduled the pretrip planning meeting
and lecture with the participants for Saturday, June 3, 10am
to 4pm. The meeting is in the Arbutus room of the Evergreen
Hotel.¶
Pg 1/1
OKAY.WPS
Press ALT to choose commands.

A A paragraph mark appears at the end of each paragraph when Show All Characters is on.

A paragraph is the basic unit to which Works applies certain formats:

- Alignment
- Indents
- Line spacing within a paragraph
- Line spacing between paragraphs
- Tab stops

Paragraphs you type in a new file have the Normal format:

Paragraph format	**Normal setting**
Left Indent	0
Right Indent	0
1st Line Indent	0
Space Before	0
Space After	0
Line Spacing	Auto
Alignment	Left
Keep Paragraph Together	Off
Keep With Next Paragraph	Off
Tab stops	Every 0.5″

To split a paragraph

If you want to split one paragraph into two, enter a paragraph mark.

1. Move the cursor to the character that will become the first character of the second paragraph.
2. Press ENTER.

   Works splits the paragraph. Both paragraphs have the same formats.

To join two paragraphs

Deleting the paragraph mark between two paragraphs joins two paragraphs into one.

1. Move the cursor to the first character of the second paragraph.
2. Press BACKSPACE.

   If you have used paragraph marks to insert blank lines between paragraphs, you'll need to press BACKSPACE to delete each paragraph mark.

   You may need to add a space between the words where the paragraphs were joined.

   The new single paragraph takes on the paragraph formats of the remaining paragraph mark.

For information on	See
Aligning paragraphs	Aligning Paragraphs
Changing line spacing	Spacing Between Lines and Paragraphs
Indenting paragraphs	Indenting Paragraphs
Procedures for formatting paragraphs	Formatting Paragraphs
Selecting paragraphs	Selecting

Plain Text Command (Format Menu)

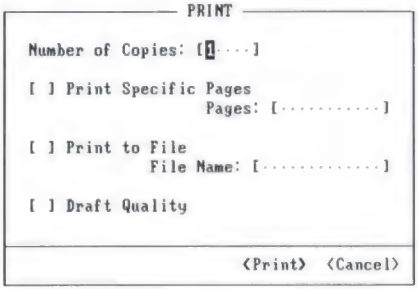
Shortcut key: CONTROL + SPACEBAR

The Plain Text command removes position and style formats from the selected text.

For information on	See
Character formats	Characters
Procedures for formatting characters	Formatting Characters

Print Command (Print Menu)

The Print command prints the file to a printer or to disk.



For descriptions of all Print dialog box options except Draft Quality, see "Printing a File," in Chapter 2, "Using Basic Skills."

Draft Quality Prints the file without character formats. This allows for faster printing speed when you want to see a copy of just the text and not the formats.

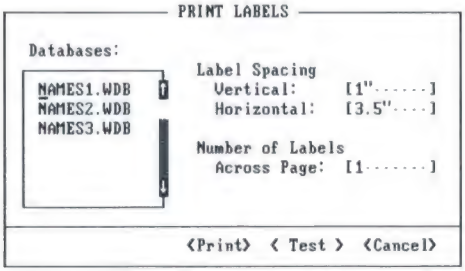
For information on	See
Printing a file	Printing a File, in Chapter 2

Print Labels Command (Print Menu)

The Print Labels command prints mailing labels from information in a database. You can print on standard labels placed one, two, three, or four across a page.

Before you use Print Labels, you must first create a Word Processor mailing labels file with placeholders for database information. You must also enter measurements for your labels in the Layout command dialog box.

Based on information in the Layout command dialog box and the Print Labels dialog box, Works determines how many labels to print on a page. Print Labels prints one label for each record in the Database file.



Databases Lists open Database files. Select the file containing the information you want to use.

Vertical Specifies the measurement from the top of one label to the top of the next label.

Horizontal Specifies the measurement from the left edge of one label to the left edge of the next label.

Number of Labels Across Page Specifies the number of labels across each page horizontally.

Print Accepts the settings and presents the Print dialog box.

Test Prints one label or row of labels. Test displays a message asking you if you want to print all labels or reprint the test labels.

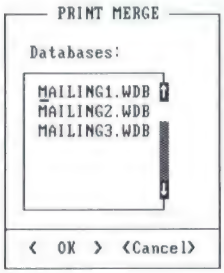
For information on	See
Creating and printing form letters	Form Letters and Forms
Creating and printing labels	Mailing Labels
Filling out pre-printed forms	Form Letters and Forms
Printing a file	Printing a File, in Chapter 2

Print Merge Command (Print Menu)

The Print Merge command prints form letters and forms using information in a Database file.

Before you can use Print Merge, you must first create a Word Processor file with standard text and placeholders for database information.

Print Merge prints one copy of the form letter or form for each record in the Database file.



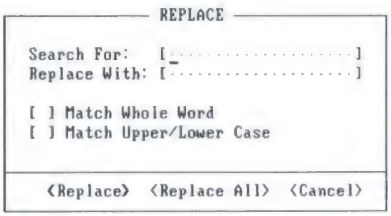
Databases Lists open Database files. Select the file containing the information you want to use.

OK Accepts the settings and displays the Print dialog box.

For information on	See
Creating and printing form letters	Form Letters and Forms
Creating and printing labels	Mailing Labels
Printing a file	Printing a File, in Chapter 2

Replace Command (Select Menu)

The Replace command searches for and selects specified text and replaces it with text you specify. Replace searches from the cursor to the end of the file. If you have a selection, Replace searches the selection only. You can review and selectively change each instance of the search text or change all instances of the search text automatically.



Search For Specifies the text you want to search for. If you have performed a previous search or replace, Works proposes that text here.

Replace With Specifies the replacement text.

Match Whole Word Searches for whole words only — not characters embedded within other words.

Match Upper/Lower Case Searches for the exact arrangement of uppercase and lower-case characters you specify in the Search For text box.

Replace All Replaces all instances of the search text in the file automatically.

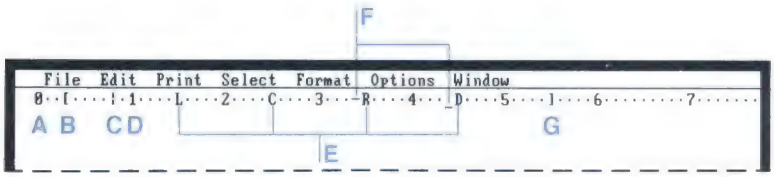
Replace Searches for and lets you review the next instance of search text before you replace it. As Works finds each instance of the search text, it displays a message in the work area. Choose No to leave the search text as it is; choose Yes to replace the search text; choose Cancel to stop replacing words.

For information on	See
Procedures for replacing text	Searching and Replacing

Ruler

The ruler is a scale across the top of the screen. The ruler shows the approximate length of lines, the indents, and the tab stops for the paragraph the cursor is in.

You can show or hide the ruler with the Show Ruler command.



A Left margin
B Left indent marker
C First line indent
D Numbers indicate inches.
E Tab stop markers
F Leader character markers
G Right indent marker

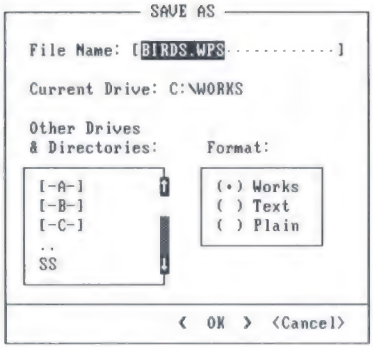
To show or hide the ruler

- From the Options menu, choose Show Ruler.

For information on	See
Indenting paragraphs	Indenting Paragraphs
Setting margins	Margins
Setting tabs	Tab Stops and Tables

Save As Command (File Menu)

The Save As command in the Word Processor has some options that the other tools don't have. These options let you save files in other file formats so they can be used by most other word processors, or to send a file with the Communications tool. These options are under Format in the Save As dialog box. The other options in this dialog box are described in "Saving a File" in Chapter 2, "Using Basic Skills."



Works Saves the file with all Works Word Processor formats.

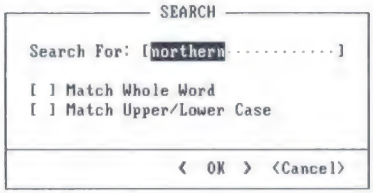
Text Saves the file without formats, as a text (ASCII) file. Carriage returns appear only after paragraph marks, not after wordwrap line breaks.

Plain Saves the file without formats, as a text (ASCII) file. Carriage returns are added after each wordwrap line break, end-of-line mark, and paragraph mark. Top and bottom margins are converted to blank lines. Left and right margins are converted to spaces.

For information on	See
Saving files	Saving Files, in Chapter 2

Search Command (Select Menu)

The Search command searches for and selects text you specify. Search searches from the cursor or the end of the selection to the end of the file.



Search For Specifies the text you want to search for. If you have performed a previous search or replace, Works proposes that text here.

Match Whole Word Searches for whole words only — not characters embedded within other words.

Match Upper/Lower Case Searches for the exact arrangement of upper-case and lower-case characters you specify in the Search For text box.

For information on	See
Searching for text	Searching and Replacing

Searching and Replacing

Use the Search command to locate text you specify. Use the Replace command to locate and replace text.

Both the Search and Replace commands search your file for instances of the search text, a character sequence you specify. For example, if you search for the character sequence "cash," Works also finds "cashier." If you want, Works can search for and replace characters only if they make a separate word. Works can also search for and replace text in a specific upper-case/lower-case combination.

Works can also search for the Word Processor's special characters, such as tab marks and paragraph marks, or for different words with similar spelling.

The Replace command matches the capitalization of replaced text. For example, if you want to replace "if" with "when," Works replaces an "If" at the beginning of a sentence with "When."

With the Replace command you can review each instance of search text before you replace it, or you can replace all instances of search text at once.

To search for text

Works searches from the cursor or the end of the selection to the end of the file. To search the entire file, first press CONTROL+HOME to go to the beginning of the file.

1. From the Select menu, choose Search.
2. In the Search For text box, type the text you want to search for.
3. Turn on the Match Whole Word check box if you want Works to search only for separate words.

   Turn on the Match Upper/Lower Case check box if you want Works to match capitalization.
4. Press ENTER.

   Works finds and selects the text.

To repeat the previous search

- Press F7.

  Works finds and selects the next instance of the search text.

To search for, review, and replace text

If you have no selection, Works searches from the cursor to the end of the file. If you have a selection, Works searches just within the selection.

1. From the Select menu, choose Replace.
2. In the Search For text box, type the text you want to replace.
3. In the Replace With text box, type the replacement text.
4. Turn on the Match Whole Word check box if you want Works to search only for separate words.

   Turn on the Match Upper/Lower Case check box if you want Works to match capitalization.
5. Choose the Replace button.

   Works selects the first instance of search text and displays a message in the work area asking you if you want to replace the search text.
6. Choose Yes or No.

   Works then searches for the next instance of the search text and asks you if you want to replace it. When Works finds no more instances of search text, it displays a message telling you.
7. Press ENTER to clear the message from the screen.

To replace all instances of the search text

1. From the Select menu, choose Replace.
2. In the Search For text box, type the text you want to replace.
3. In the Replace With text box, type the replacement text.
4. Turn on the Match Whole Word check box if you want Works to search only for separate words.

   Turn on the Match Upper/Lower Case check box if you want Works to match capitalization.
5. Choose the Replace All button.

   Works replaces all instances of the search text automatically, then displays a message in the work area telling you how many instances were replaced.
6. Press ENTER to clear the message from the screen.

To search for or replace special characters

You can search for or replace text that has special characters, or a combination of special and regular characters. For example, you may want to search for a word only when it appears at the beginning of a paragraph, or you may want to replace leading spaces with tab marks in a file transferred by Communications.

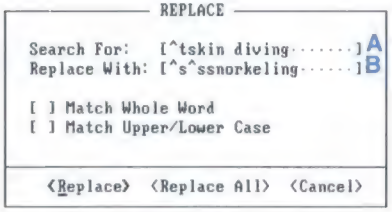
- In the left column of the table below, find the special character you want to search for or replace. Find the corresponding code for that character in the right column. Type the character's code in the Search For or Replace With text box.

To search for or replace	Type
Tab mark	^t
Paragraph mark	^p
End-of-line mark	^n
Manual page break mark	^d
Non-breaking space	^s
Optional hyphen	^-
Non-breaking hyphen	^~
Caret (^)	^^
Question mark (?)	^?
Any ASCII character	^# (where # is the ASCII number)
White space	^w
Any character	?

Note To type the caret (^) character, press SHIFT+6. Some computer systems use the caret to represent the CONTROL key.

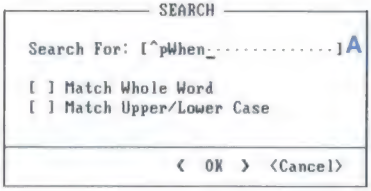
You use ? to find different words with similar spellings. For example, "Anders?n" would find both "Andersen" and "Anderson."

White space (^w) is any number and combination of two or more consecutive spaces, tab marks, non-breaking spaces, end-of-line marks, paragraph marks, and manual page break marks. For example, if you copy columnar information from another file, and the columns are separated by spaces, you can search for white space (^w) and replace it with a tab (^t). If you want to search only for sequences of two or more spaces, use a space followed by ^w as the search text.



A Searches for a tab mark followed by the words "skin diving"...

B ...And replaces them with two spaces and the word "snorkeling".



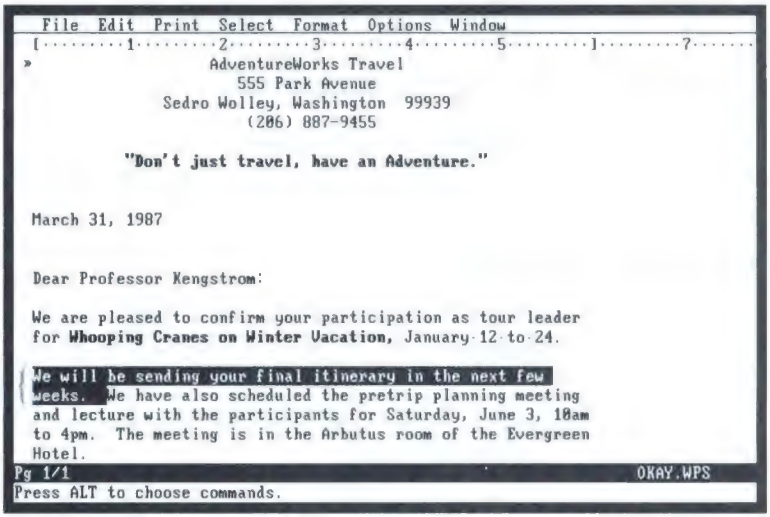
A Searches for the word "When" only at the beginning of a paragraph.

For information on	See
Special characters	Special Characters

Selecting

Selecting is how you tell Works what text you want to work with. When you select text, the next command you choose acts on the selected text. You can select as little as one character, or as much as an entire paragraph or file. Selected text is called a selection and is indicated by a highlight. If you have no selection, Works displays a cursor.

You must select text to copy, move, delete, or format it. Other actions also affect selected text. If you begin typing when you have a selection, what you type replaces the selection.


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure."
March 31, 1987
Dear Professor Kengstrom:
We are pleased to confirm your participation as tour leader for Whooping Cranes on Winter Vacation, January 12 to 24.
We will be sending your final itinerary in the next few weeks. We have also scheduled the pretrip planning meeting and lecture with the participants for Saturday, June 3, 10am to 4pm. The meeting is in the Arbutus room of the Evergreen Hotel.
A
Pg 1/1
OKAY.WPS
Press ALT to choose commands.

A Selected text

You can select text using either the SHIFT key or F8. The SHIFT key method is fast for making smaller selections, but requires that you hold down the SHIFT key. The F8 method is more convenient for making larger selections — entire words, sentences, paragraphs, or files.

To select text with the SHIFT key

1. Move the cursor to where you want to begin the selection.
2. Press and hold the SHIFT key.
3. Press any movement key to extend your selection in the direction indicated by the key.

To increase or decrease a selection you made with the SHIFT key

1. Press and hold the SHIFT key.
2. Press any movement key to increase or decrease the selection.
3. When you are satisfied with the selection, release the SHIFT key.

To cancel a selection you made with the SHIFT key

- Press any movement key.

  The highlight disappears and the cursor reappears.

To select text with F8 (EXTEND)

1. Move the cursor to where you want to begin the selection.
2. Press F8.

   EXTEND appears in the status line.
3. Press the key corresponding to the text you want to select as shown in the table below:

To select	Press
Any amount of text	Movement keys
Character above the cursor	RIGHT
Word the cursor is in	F8
Sentence the cursor is in	F8 two times
Paragraph the cursor is in	F8 three times
Entire file	F8 four times

Your selection remains until you cancel it or choose a command.

To shrink a selection you made with F8 (EXTEND)

- Press SHIFT + F8.

  The selection decreases in the same increment in which it was increased or extended until the cursor returns.

To cancel a selection you made with F8 (EXTEND)

1. Press ESCAPE.
2. Press any movement key.

Tip After you press F8, you can use the Search and Go To commands to extend the selection from the cursor to a specific word or page number.

To select more than one paragraph

1. Move the cursor anywhere in a paragraph.
2. Press F8 until the entire paragraph is selected.
3. Press CONTROL + DOWN for each subsequent paragraph you want to select.

For information on	See
Movement keys	Keyboard

Show All Characters Command (Options Menu)

The Show All Characters command displays or hides the special characters Works uses to represent paragraph marks, tab marks, end-of-line marks, spaces, and optional hyphens. When you start Works, Show All Characters is off. A mark beside Show All Characters on the menu means it is on.

You can copy, move, delete, and search for special characters as you would any others.

For information on	See
Searching for special characters	Searching and Replacing
Using the Show All Characters command	Special Characters

Show Ruler Command (Options Menu)

The Show Ruler command displays or hides the ruler.

The ruler shows margins, indents, and tab stops for the paragraph the cursor is in.

For information on	See
The ruler	Ruler

Single Space Command (Format Menu)

Shortcut key: CONTROL+1

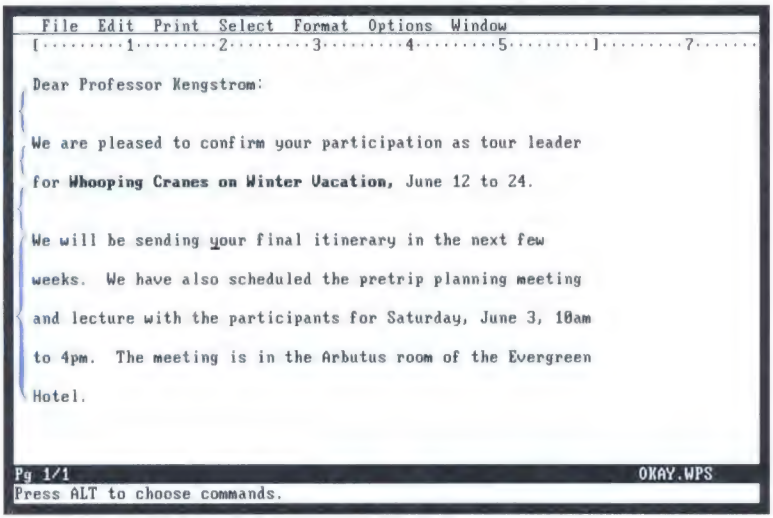
The Single Space command gives the selected paragraph(s) single, or auto, spacing.

For information on	See
Changing line spacing	Spacing Between Lines and Paragraphs

Spacing Between Lines and Paragraphs

Spacing is the amount of vertical space between lines, measured from the bottom of one line to the bottom of the next. You can change the spacing between lines in a paragraph and automatically add space before and after a paragraph.

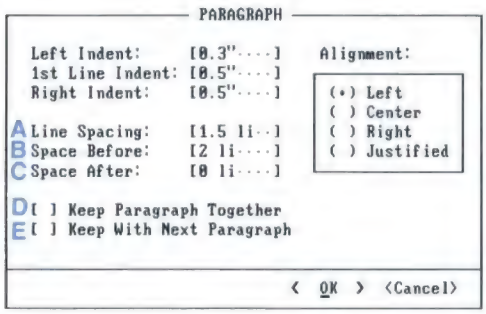
You change the spacing for selected paragraphs with the Single Space, Double Space, and Paragraph commands.


File Edit Print Select Format Options Window
Dear Professor Kengstrom:
We are pleased to confirm your participation as tour leader
for Whooping Cranes on Winter Vacation, June 12 to 24.
We will be sending your final itinerary in the next few
weeks. We have also scheduled the pretrip planning meeting
and lecture with the participants for Saturday, June 3, 10am
to 4pm. The meeting is in the Arbutus room of the Evergreen
Hotel.
Pg 1/1
OKAY.WPS
Press ALT to choose commands.
B
A
B
A

A Text within each paragraph is double-spaced.
B Additional space is specified before each paragraph.

The Single Space command applies auto spacing: Works looks for the largest font size in a paragraph and sets the height of all lines in the paragraph to this size. The Double Space command sets the line spacing to double. Works puts an additional 1/6″ between lines.

If you need line spacing other than single or double, you can specify it with the Paragraph command.



A Specifies the spacing between lines.

B Specifies the space before a paragraph.

C Specifies the space after a paragraph.

D Prevents a page break in the middle of a paragraph.

E Prevents a page break between the selected paragraph(s) and the next paragraph.

For single line spacing type *auto* in the Line Spacing text box. Typing 1 sets the minimum line height to 1/6 inch, or six lines per vertical inch. If the font size in any line in a paragraph exceeds 1/6 inch, that line is increased in height, but all other lines remain at 1/6 inch. This is useful for mailing labels or forms or whenever you need to know how many lines will print vertically.

Your screen shows line spacing for whole-number amounts, such as single or double. If you specify line spacing of non-whole number amounts, Works rounds it up to the next number on the screen. For example 1.5 line spacing is displayed as double spacing. You'll see the correct line spacing when you print your file.

You can control the amount of space between paragraphs independently from line spacing. For example, you may want single-spaced text, but a blank line between paragraphs. You use the Paragraph command to automatically add space before or after a paragraph.

To change to double line spacing

1. Select the paragraph(s) you want to have double spacing.
2. From the Format menu, choose Double Space.

To change to single (auto) line spacing.

1. Select the paragraph(s) you want to have single spacing.
2. From the Format menu, choose Single Space.

To specify line spacing other than single or double

1. Select the paragraph(s) you want to specify line spacing for.
2. From the Format menu, choose Paragraph.
3. In the Line Spacing text box, type the amount of line spacing you want.

For	Type
Auto spacing	auto
Single spacing, minimum line height of 1/6 inch	1
Double spacing	2
Fractional amounts	The number and a decimal for the fraction: 1.25, 2.5, and so forth
Triple spacing or more	3, or any other number

4. Press ENTER.

Note If you type just a number, Works assumes that the unit of measure is lines. You can type any other unit of measure, including inches, points, or picas.

To add space before or after a paragraph

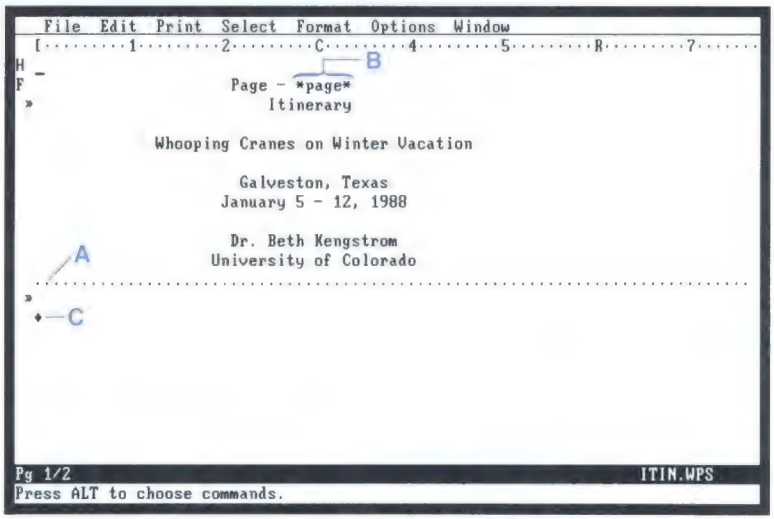
1. Select the paragraph(s) you want to add space before or after.
2. From the Format menu, choose Paragraph.
3. In the Space Before or Space After text box, type the number of lines you want.
4. Press ENTER.

For information on	See
Paragraph command dialog box	Paragraph Command

Special Characters

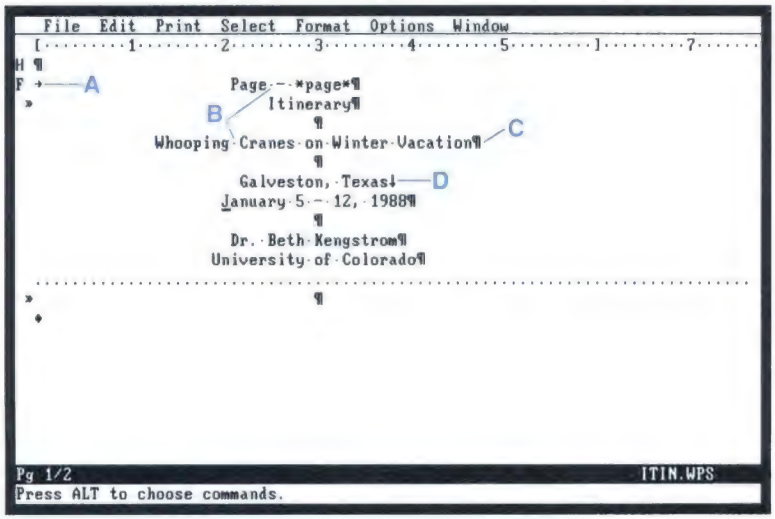
Special characters are characters you type in a Works file that have special meaning. You can select and format special characters like any other text.

Works always displays the following special characters:



A Manual page break
B Placeholder
C End mark

Works displays the following special characters when the Show All Characters command is on:



A Tab mark
B Space mark
C Paragraph mark
D End-of-line mark

If the Show All Characters command is off, these characters appear as blank spaces. You can still select them and delete them.

To hide or display special characters

- From the Options menu, choose Show All Characters.

For information on	See
Inserting special characters	Insert Special Command
Searching for special characters	Searching and Replacing

Spelling

You check the spelling of words in your file with the Check Spelling command. Works checks the spelling of words in a selection. If you have no selection, Works checks from the cursor to the end of the file. Works automatically checks your file against its main dictionary, and a personal dictionary, if you have one.

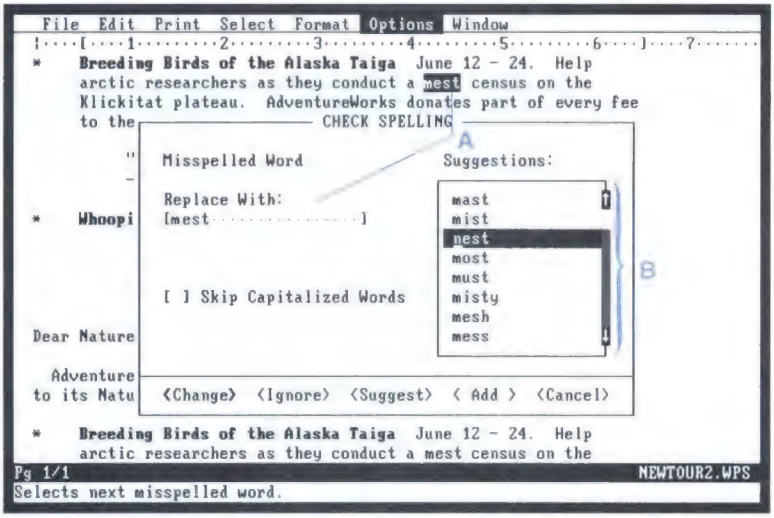
When you check the spelling in a file, Works selects and displays any word not found in either dictionary. You can correct the spelling of the word; or, if it's a valid word not in the main dictionary, add it to your personal dictionary. Works also searches for words with incorrect capitalization and repeated words, such as "the the."

Works provides a main dictionary, the file MAIN.DIC. You can put words you use often, such as names, proper nouns, or acronyms, in a personal dictionary. Works creates a PERSONAL.DIC file the first time you choose the Add button in the Check Spelling command dialog box. From then on, each time you choose the Add button, Works adds the word to your personal dictionary.

To check spelling

1. To check the spelling of the entire file, press CONTROL+HOME to go to the beginning of your file.
2. From the Options menu, choose Check Spelling.

   When Works finds a word not in its dictionaries, it selects the word and displays it in the Replace With text box.



A Works selects the misspelled word and displays it in the Replace With text box.

B Works displays a list of suggested corrections.

3 To leave the word as it is, choose the Ignore button.

To change the word, type a replacement or edit the word in the Replace With text box, then choose the Change button.

To view a list of proposed spellings, choose the Suggest button. Select a word from the list, then choose the Change button.

To add the word to the personal dictionary, choose the Add button.

After you choose the Ignore, Add, or Change button, Works selects the next misspelled word. For each misspelled word you decide whether to change it, ignore it, get suggestions, or add it to your personal dictionary.

When the spelling check is finished, Works displays a message telling you.

4 Press ENTER to clear the message from the screen.

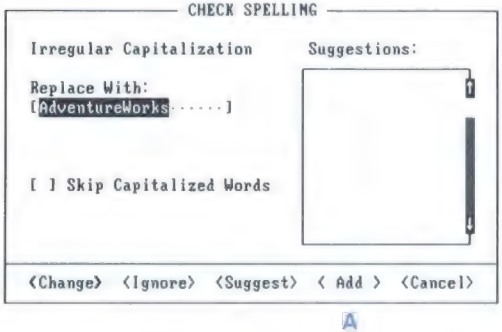
Note To end the spelling check at any time, press ESCAPE to cancel.

To add a group of words to the personal dictionary

You can add words to the personal dictionary as you are checking your spelling. If you know you have a group of words to add, such as names, proper nouns, or terminology unique to your profession, you can add all the words in one session.

1. From the File menu, choose New.
2. In the New dialog box, select Word Processor.
3. Press ENTER.
4. Type all the words you want to add to your personal dictionary.
5. Press CONTROL+HOME to go to the beginning of the file.
6. From the Options menu, choose Check Spelling.

   If the words you typed are not in the main dictionary, Works presents each word as misspelled.
7. Choose the Add button for each word to add it to your personal dictionary.



A

A To add AdventureWorks to your personal dictionary, choose the Add button.

When the spelling check is finished, Works displays a message telling you.

8. Press ENTER to clear the message from the screen.

To remove words from your personal dictionary

1. Use the Open command to open the file PERSONAL.DIC.

   This file should be on the disk that contains the spelling program.
2. In the file, select the entry you want to remove.

3. Press DELETE.
4. From the File menu, choose Save.
5. From the File menu, choose Close.

Note Do not use this procedure to add words to your personal dictionary. Instead, use the Check Spelling command.

For information on	See
Check Spelling command dialog box	Check Spelling Command

Split Command (Options Menu)

The Split command creates a horizontal line that divides the work area into two windows. Each window can show a different part of your file, letting you look at two different parts at once.

To create a split

1. From the Options menu, choose Split.
2. Press the DOWN key to move the split to where you want it.
3. Press ENTER.

File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
"Don't just travel, have an Adventure."
March 31, 1987
Dear Professor Kengstrom:
A
and lecture with the participants for Saturday, June 3, 10am
to 4pm. The meeting is in the Arbutus room of the Evergreen
Hotel.

A Split

To move a split

1. From the Options menu, choose Split.
2. Press the DOWN or UP key to move the split to where you want it.
3. Press ENTER.

To remove a split from the screen

1. From the Options menu, choose Split.
2. Press the HOME or END key to move the split out of the work area.
3. Press ENTER.

Status Line

The status line displays information about what you are seeing and doing as you work in your file. Look at the status line to see:

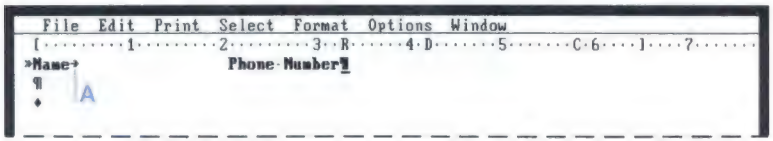
- Current page number
- Total number of pages in your file
- Filename
- Styles applied to a selected character
- Messages about operations in progress, such as COPY, MOVE, or EXTEND

Tab Stops and Tables

Tab stops in the Word Processor allow you to position text precisely within a line or column in a table. To position text horizontally within a line, always use a tab stop instead of typing spaces with the SPACEBAR.

When you press the TAB key, Works inserts a tab mark in your file at the tab stop and moves the cursor to the next tab stop.

Note You can see tab marks in your file only if the Show All Characters command is on.

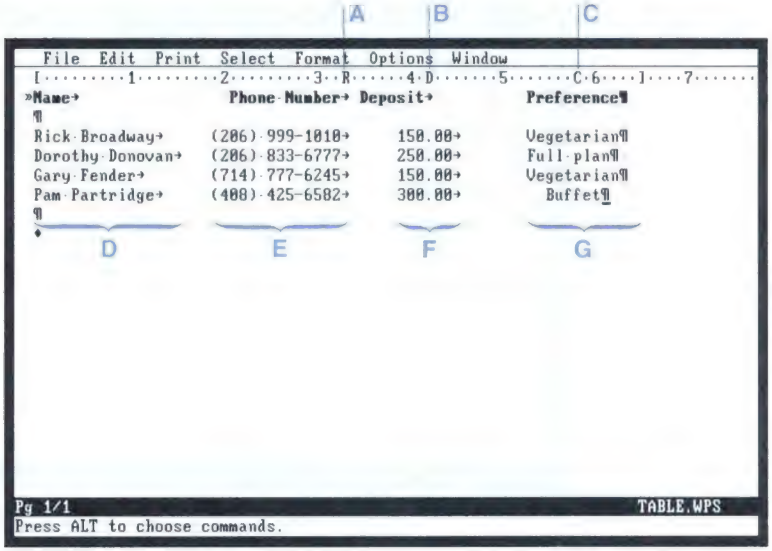


A Tab mark

Works has both default tab stops and tab stops you set yourself. A new file has default tab stops set every 0.5″, left-aligned. Works doesn't show these on the ruler. You can change the distance between default tab stops with the Tabs command. When you set a tab stop, all default tab stops to the left of the new one are removed.

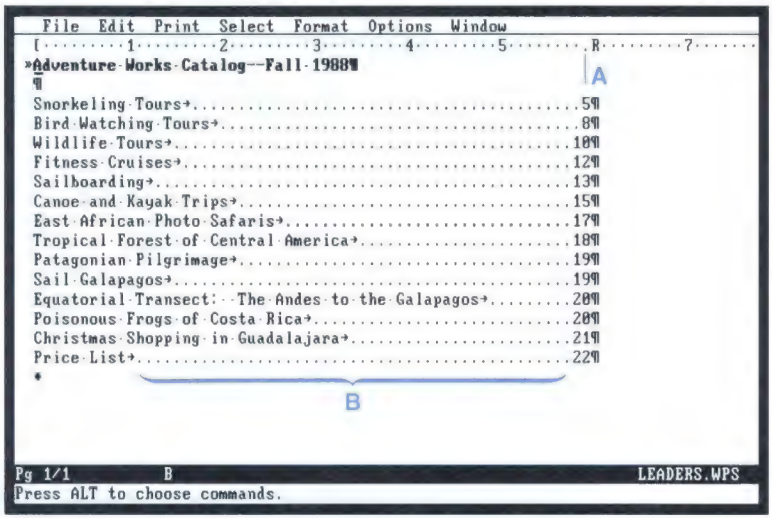
You can set your own tab stops for selected paragraphs with the Tabs command. These tab stops are part of a paragraph's format and are shown on the ruler. When you set a tab stop, the default tab stops to the left are eliminated. If you need to change the position of a tab stop, you add a new one first, then delete the old one.

You can align text to the right or left of a tab stop, center it at a tab stop, or align it at the decimal point of numbers.



A Right-aligned tab stop
B Decimal tab stop
C Centered tab stop
D Left-aligned column
E Right-aligned column
F Decimal-aligned colum
G Centered column

Tab stops can also have a leader character. The leader character fills the space before the tab stop.



A The leader character appears to the left of the tab stop on the ruler.

B Leader characters

To change the distance between default tab stops

1. From the Format menu, choose Tabs.
2. In the Position text box, type the distance you want between default tab stops.
3. Under Alignment, select an option.
4. Under Leader, select a leader character.
5. Choose the Default button.

To set a tab stop with the Tabs command

1. Select the paragraph(s) you want to set tab stops for.
2. From the Format menu, choose Tabs.
3. In the Position text box, type the position you want the tab stop to be.
4. Under Alignment, select an option.
5. Under Leader, select a leader character.
6. Choose the Set button.

   The tab stop appears on the ruler.

To remove a tab stop that you set

You can remove tab stops you've set with the Tabs command. You cannot remove default tab stops.

1. Select the paragraph(s) from which you want to remove a tab stop.
2. From the Format menu, choose Tabs.
3. In the Position text box, type the position of the tab stop you want to remove.
4. Choose the Clear button.

   Works removes the tab stop, plus any tab stops within one tenth of an inch of the position you type.

Tab marks you've typed in the paragraph(s) are not removed, so the text aligns at the next tab stop.

To remove all tab stops

1. Select the paragraph(s) from which you want to remove tab stops.
2. From the Format menu, choose Tabs.
3. Choose the Clear All button.

   Works removes all the tab stops. Tab marks in the paragraph(s) align with the nearest default tab stop.

To add, change, or remove leader characters

A leader character fills the space before a tab stop. You can add leader characters to a new tab stop or to an existing one.

1. Select the paragraph(s) for which you want to add or delete leader characters.
2. From the Format menu, choose Tabs.
3. In the Position text box, type the position of the tab stop whose leader character you want to change.
4. Under Leader, select a leader character option.

   To delete leader characters, select None.
5. Choose the Set button.

To create a table

1. Set a tab stop for each column in the table.

   Use decimal or right-aligned tab stops for columns of numbers.
2. Start typing the text for the table, pressing the TAB key when you want to begin a new column.
3. To start a new line in the table, press SHIFT+ENTER.

   This allows you to format the table as one paragraph. If you want to format each line separately, press ENTER instead.

To add a column to a table

1. Select the entire table.
2. From the Format menu, choose Tabs.
3. In the Position text box, type the position you want the new tab stop to be.
4. Under Alignment and Leader, select the options you want.
5. Choose the Set button.
6. Insert a tab mark and the new text on each line.

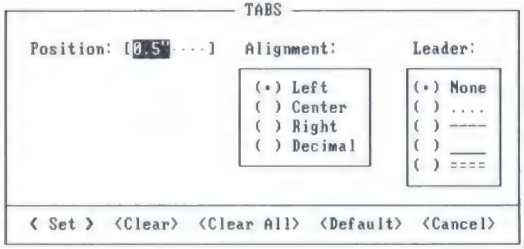
To delete a column from a table

1. To display tab marks in your file, choose Show All Characters from the Format menu.
2. In the first line of the table, select the text and the tab mark preceding it for the column you want to remove.
3. Press DELETE.
4. Repeat steps 2 and 3 for each column you want to delete.

For information on	See
Paragraph formats	Paragraphs
Setting indents	Indenting Paragraphs

Tabs Command (Format Menu)

The Tabs command lets you set, remove, and change alignment and leader characters for tab stops. You can also use the Tabs command to change the distance, alignment, and leader characters for default tab stops.



Position Specifies the position of tab stops or the distance between default tab stops.

Alignment Specifies the tab stop alignment.

Left	Aligns left edge of text at the tab stop.
Center	Centers text at the tab stop.
Right	Aligns right edge of text at the tab stop.
Decimal	Lines up the decimal point in a number with the tab stop. If the text has no decimal point, then aligns left edge of text at the tab stop.

Leader Sets the leader character you want to fill the space before the tab stop.

Set Adds the new tab stop to the paragraph(s).

Clear Removes the specified tab stop from the paragraph(s).

Clear All Removes all tab stops from the selected paragraph(s).

Default Takes the setting in the Position text box and makes it the distance between default tab stops.

For information on	See
Setting tabs	Tab Stops and Tables 7143

Template Files

If you create files with similar formats, settings, and text, it is often easier to create a template file that contains these similar elements. Instead of creating a new file each time, you open the template file with the settings, text, and formats that don't change. You just type the information that is variable.

To create a template file

1. From the File menu, choose New.
2. In the New dialog box, select Word Processor.
3. Press ENTER.
4. Type any text that you'll use every time.
5. Set any tab stops you need.
6. Change character and paragraph formats.
7. Create the headers and footers you want with the Layout or Headers & Footers command.
8. From the File menu, choose Save As.
9. In the File Name text box, type a name for the file that will be easy to remember, such as TEMPLT1.WPS.
10. Press ENTER.

To create a file from a template file

1. Open your template file.
2. From the File menu, choose Save As.
3. In the Filename text box, type a name for the file.
4. Press ENTER.
5. Enter the information that is variable and edit the file as you wish.

Typing Text

When you open a new Word Processor file, it is ready for you to begin typing text. Text is made up of characters. Letters, numbers, symbols, and spaces are all characters to the Word Processor. As you type, text appears on the screen. The cursor moves to the right to accommodate the new text. If you make a mistake while you are typing, you can use the BACKSPACE key to delete the mistake, then continue typing. As you type you cannot move the cursor beyond the file's end mark.

The text you type automatically moves to the next line if it doesn't fit within the right margin mark. This is called wordwrap. With wordwrap you don't have to press a key to begin a new line within the same paragraph. Press ENTER only when you want to end a paragraph to begin a new one. If you add or delete text, wordwrap automatically rearranges the lines of text to accommodate the new text or to fill gaps created by the deleted text.

There are two situations in which you want to prevent wordwrap:

- When you want to end a paragraph, press ENTER.
- When you want to begin a new line within a paragraph, press SHIFT + ENTER.

To type text

The following table shows the basic procedures for typing or deleting text:

To	Press or do this
Insert new text	Move the cursor to where you want to insert and type
Create a new paragraph	ENTER
Start a new line	SHIFT + ENTER
Delete a typing mistake	BACKSPACE

To type characters from the IBM extended character set

You can type characters that are part of the IBM extended character set. These characters include symbols, Greek letters, international characters, and lines that can be used to draw boxes and pictures. These extended screen characters may not be available on your particular printer. See your printer manual for details.

1. Press and hold ALT.
2. On the numeric keypad, type the 3-digit code.

Works inserts these codes in your file and when you print it, these characters show up.

For information on	See
Deleting text	Deleting Text
Inserting text	Inserting Text
Replacing text	Searching and Replacing

Underline Command (Format Menu)

Shortcut key: CONTROL+U

The Underline command makes the selected text underlined. If you have no text selected, new characters typed at the cursor are underlined.

For information on	See
Making characters underlined	Formatting Characters

Undo Command (Edit Menu)

The Undo command reverses your most recent editing or formatting action. You can undo the following actions and commands:

- Insert Special command
- Insert Field command
- Insert Chart command
- Copy Special command
- Copy command
- Move command
- Delete command
- All Format commands
- Typing, from time the last command was carried out or since you last moved the cursor
- Check Spelling command — undoes only the last word you changed in the spelling check
- Replace command (Replace button) — undoes only the last word you replaced
- Replace command (Replace All button) — undoes all words you replaced

The Spreadsheet

Welcome to the Spreadsheet. The Spreadsheet gives you powerful calculating ability plus the flexibility to create charts from your data. Works can handle even the most complex financial, statistical, or scientific problems from cash flow analysis to taxes and sales projections.

Use Works for:

- Budgets. Monitor your company, departmental, or household budget by seeing where you spend money and comparing how you did against established goals.
- Investments. Track your personal or business investments and summarize the activity and performance in a net worth statement.
- Loans. Prepare loan schedules that automatically figure the interest and principal portions for a series of loan payments.
- Data reduction. Organize and summarize data from repetitive scientific tests.

The next five chapters explain how to use the Spreadsheet, Functions, and Charting.

- Chapter 5, "Introduction to the Spreadsheet," explains what a spreadsheet is and how to create one.
- Chapter 6, "Spreadsheet Reference," is an alphabetical reference for commands and tasks.
- Chapter 7, "Spreadsheet and Database Functions," describes the Works functions and how to use them in your spreadsheet and database formulas.
- Chapter 8, "Introduction to Charting," explains what a chart is and how to create one.
- Chapter 9, "Charting Reference," is an alphabetical reference for commands and tasks.

5 Introduction to the Spreadsheet

The Spreadsheet automates the kind of figuring you do with a sheet of paper and a calculator: taxes, sales projections, data reduction, or personal net worth statements.

A spreadsheet contains boxes called cells that you fill with text, numbers, or mathematical equations called formulas. You type in the data, and Works does the calculating for you.

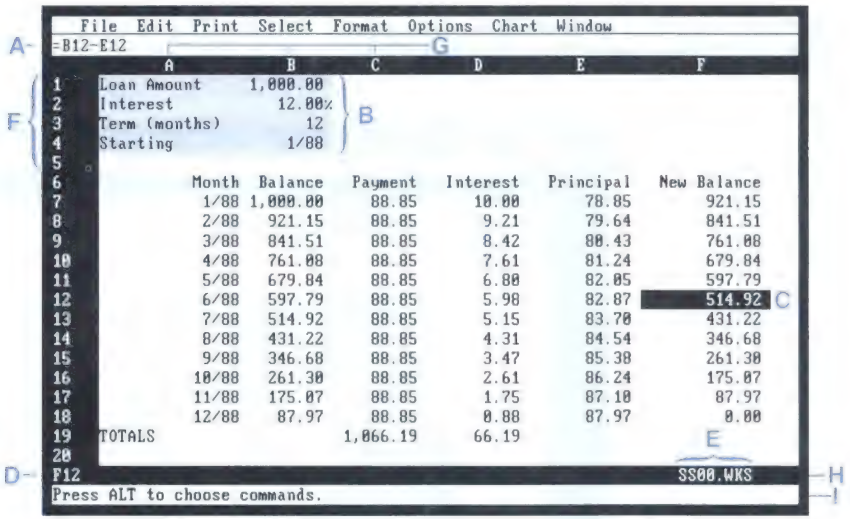
You can experiment with different numbers and let Works recalculate, automatically. When your spreadsheet shows the result you want, you can print it.

Although this chapter is not a tutorial, it introduces you to some basics about spreadsheets and explains generally how to create them. Topics include:

- Looking at a spreadsheet
- The formula bar and the active cell
- Numbers, formulas, and text
- Relative and absolute references
- Creating a spreadsheet
- Formatting cells
- Copying cells
- Printing a spreadsheet

Looking at a Spreadsheet

The Spreadsheet screen looks like this:



A Formula bar shows the contents of the active cell—a formula.

B A range is a rectangular group of cells. This is range A1:B4.

C Active cell

D Active cell's reference

E Spreadsheet name

F Row headings (1-4096)

G Column headings (A-IV)

H Status line

I Message line

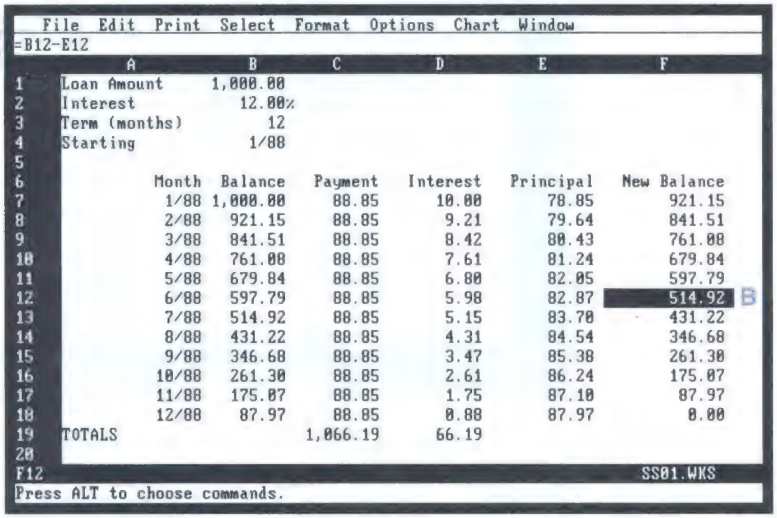
You are used to seeing numbers organized into columns and rows. They make information easier to find and understand. A spreadsheet is made of 256 columns and 4096 rows. Each column has a lettered heading: A through Z, AA through AZ, BA through BB, and so on to IA through IV. Each row has a numbered heading: 1 through 4096.

Each column and row intersects to form a cell. For example, column F and row 12 intersect to make cell F12. F12 is called the cell reference. The information you enter on your spreadsheet — numbers, formulas, text — is stored in cells.

A rectangular group of cells is called a range. Ranges can be as small as one cell or as large as the entire spreadsheet. You can use many of the Works commands, such as Copy or Move, to work with all cells in a range instead of one at a time.

You use cell references to describe which cells are in a range. The cell references of the upper-left and lower-right corners of the range, separated by a colon (:), make a range reference. For example, A1:B4 is a range reference that describes a range of eight cells: A1, A2, A3, A4, B1, B2, B3, B4.

The Formula Bar and the Active Cell



	A	B	C	D	E	F
1	Loan Amount	1,000.00				
2	Interest	12.00%				
3	Term (months)	12				
4	Starting	1/88				
5						
6	Month	Balance	Payment	Interest	Principal	New Balance
7	1/88	1,000.00	88.85	10.00	78.85	921.15
8	2/88	921.15	88.85	9.21	79.64	841.51
9	3/88	841.51	88.85	8.42	80.43	761.08
10	4/88	761.08	88.85	7.61	81.24	679.84
11	5/88	679.84	88.85	6.80	82.05	597.79
12	6/88	597.79	88.85	5.98	82.87	514.92
13	7/88	514.92	88.85	5.15	83.70	431.22
14	8/88	431.22	88.85	4.31	84.54	346.68
15	9/88	346.68	88.85	3.47	85.38	261.30
16	10/88	261.30	88.85	2.61	86.24	175.07
17	11/88	175.07	88.85	1.75	87.10	87.97
18	12/88	87.97	88.85	0.88	87.97	0.00
19	TOTALS		1,066.19	66.19		
20						

A Formula bar shows the contents of the active cell—a formula.
B Active cell displays a value.

You use the formula bar to enter and edit text, numbers, and formulas. Whatever you type into the spreadsheet first appears in the formula bar. When you press ENTER, Works places what is in the formula bar in the active cell.

The active cell is the highlighted cell you are working with. If you want to make another cell the active cell, use the DIRECTION keys to move the highlight to it. The new active cell's contents then display in the formula bar.

Numbers, Formulas, and Text

Works interprets anything you enter into a cell as either a number, formula, or text.

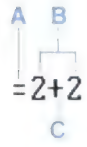
Numbers

A number expresses a quantity. You can enter numbers into the formula bar in many ways.

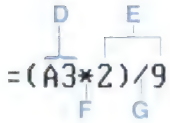
Enter	Like this
Integers	789, −789
Decimal fractions	7.89, 0.789, −789
Exponential numbers	7.89E2, 789E-12
Fractions or stock prices	10 3/4

Formulas

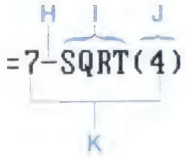
A formula is an equation Works uses to calculate a value. Formulas can contain numbers, cell or range references, operators (such as + or −), and functions. When you enter formulas in the formula bar, you type an equal sign first. Here are some examples of formulas:



A Starts with an equal sign.
B Number
C Addition operator



D Cell reference
E Number
F Multiplication operator
G Division operator



H Subtraction operator
I Square Root function
J Function argument
K Number

A formula such as =B1+B2 contains cell references. Works uses the values in these cells to calculate the formula's value. In this case, Works adds the values in cells B1 and B2.

A formula such as =SQRT(256) contains a function. A function is a built-in equation you can use to solve a complicated calculation. In this case, the SQRT function calculates the square root of 256. Works has 57 built-in functions.

Text

Text is any series of characters that Works doesn't interpret as a formula, number, date, or time. Here are some examples of text:

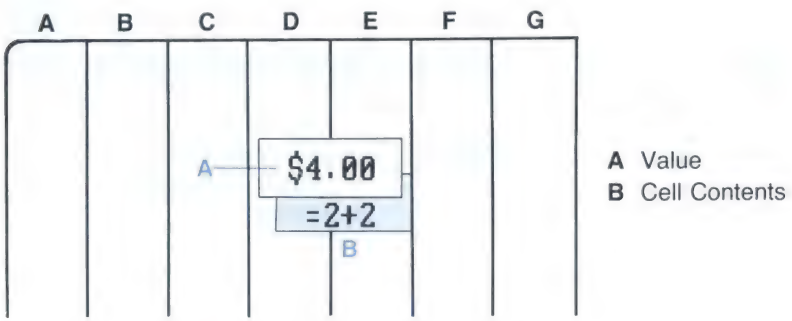
Melvin Morsmere	1600 Pennsylvania Avenue
555-1212	123-45-6789

If you want to enter an equal sign as the first character of text, precede it with a double quotation mark ("). This prevents Works from thinking it's a formula. For example, if you want to display =Great!= in a cell, you'd have to type "=*Great!*= in the formula bar.

The formulas and numbers you type in the formula bar may not match what Works displays in the active cell because:

- Works first "evaluates" formulas and then displays their values.
- Works "formats" numeric values based on the cell's format.

For example, if you enter the formula =2+2, Works may display $4.00 in the active cell. First Works evaluates the formula and arrives at the value 4. Then Works displays the value using the cell's format. (In this case, you used the Dollar command to format the cell in dollar format.)

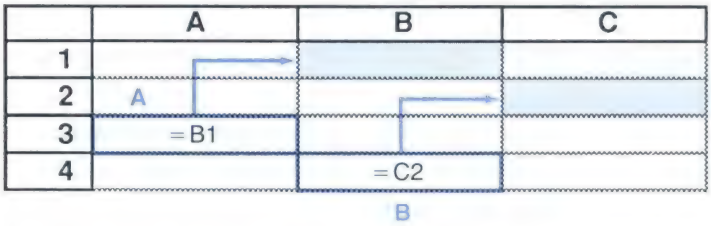


Relative and Absolute References

Cell and range references use values from other cells in a formula to calculate a new value. This section describes how Works uses references in formulas to obtain values in other cells. You'll also see how Works uses references to update formulas when a value the formula refers to changes.

Relative References

Most cell and range references in a spreadsheet are relative references. A relative reference tells Works how to locate a cell. It's like saying, "Go up two blocks and over one." For example, let's say you enter the formula =B1 in cell A3. The cell reference in the formula points to a cell that is two rows up and one column to the right. If you were to copy this formula to cell B4, Works would still look for a value in the cell that is two rows up and one column to the right, cell C2. Works would enter =C2 as the formula.



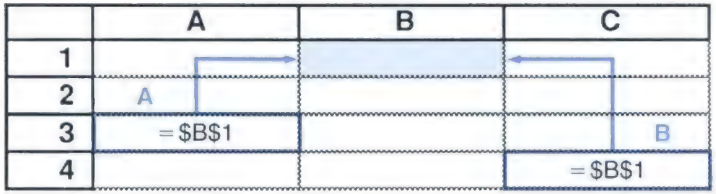
A The original formula tells Works to go up two rows and right one column to get a value.

B When you copy the formula, Works uses the same relationship and goes up two rows and right one column to get a value.

Copying relative references saves you time whenever you need to have several formulas that all use the same relationships. You can enter the formula once, then copy it to all the other cells that use the same formula.

Absolute References

An absolute reference is like a mailing address. It describes one specific location in the spreadsheet. No matter where you copy a formula containing an absolute reference, it still points to the same cell. For example, an absolute reference to cell B1 always points to cell B1, even if the formula containing the reference is copied to another location on the spreadsheet. You insert dollar signs into a reference you want to be absolute. For example, $B$1 is an absolute reference to cell B1.



A The absolute reference in the original formula tells Works to get only the value in cell B1.

B When you copy the formula, Works uses the same absolute reference to get only the value in cell B1.

The difference between relative and absolute references is apparent when you copy them to other cells. Works adjusts relative references for their new locations, but absolute references do not change. They always point to the same cell.

Creating a Spreadsheet

An important first step in creating a spreadsheet is organizing your thoughts and information. It helps to take a few minutes to:

- Choose a subject. For example, if your major purpose is to set up an expense report document, don't get sidetracked by putting a travel budget in the same spreadsheet.
- Choose the components. Write down all the information you need for your calculations.
- Decide what goes where. A good spreadsheet structure makes it easy to find the information you need after the calculations are complete.
- Plan the calculations. Find the equations that produce the results you want. These equations will become your spreadsheet formulas.
- Decide on the numbers. Once your text and formulas are entered in your spreadsheet, you will need only the numbers that the formulas will use to find your answers.

Once you've organized your thoughts and information, you're ready to begin entering your information. First you select the cell you want to work with and enter your information. Then you can edit and format what you've entered.

Selecting Cells

Selecting is how you tell Works which cells you want to work with. You select a cell to make it active. Often, you need to select cells before you use a command. For example, you can use selecting and the Move command to move hundreds of cells to a new location in one procedure.

To select a cell

- Use the DIRECTION keys to move the highlight to the cell you want to work with.

  This cell becomes the active cell.

You can make a selection larger than one cell by pressing F8 and using the DIRECTION keys to extend the selection.

To extend a selection

1. Move the highlight to the upper-left corner cell of the range you want to select.
2. Press F8.

   Pressing F8 holds one corner of the selection in place as you extend the selection to other cells.
3. Use the DIRECTION keys to select the other cells in the range.

Entering Numbers or Text

When you enter text and numbers, they appear in the formula bar first. They are placed in the active cell when you press ENTER. Any existing data in the active cell is replaced by the new data.

To enter a number or text into a cell

1. Use the DIRECTION keys to select the cell you want to enter the number or text into.

   This cell becomes the active cell.
2. Type the number or text.

   If you make a typing mistake, use the BACKSPACE key to back up and delete the mistake, then continue typing.
3. Press ENTER.

Entering Formulas

When you enter formulas, they appear in the formula bar first. They are placed in the active cell when you press ENTER. Formulas begin with an equal sign (=). When you type =, Works knows you are entering a formula.

To enter a formula into a cell

1. Use the DIRECTION keys to select the cell you want to enter the formula into.
2. Type =
3. Type the formula.

   If you make a typing mistake, use the BACKSPACE key to back up and delete the mistake, then continue typing.
4. Press ENTER.

Entering References into Formulas with Point Mode

Most of your formulas will include a cell or range reference. You can type the references in yourself, or have Works do it for you by using point mode.

Point mode lets you insert the reference into the formula by using the DIRECTION keys to select the desired cells. Using point mode is an easy way to see exactly which references are included in your formula.

As soon as you begin typing a formula, you are in point mode. The status line displays POINT.

To enter a cell reference with point mode

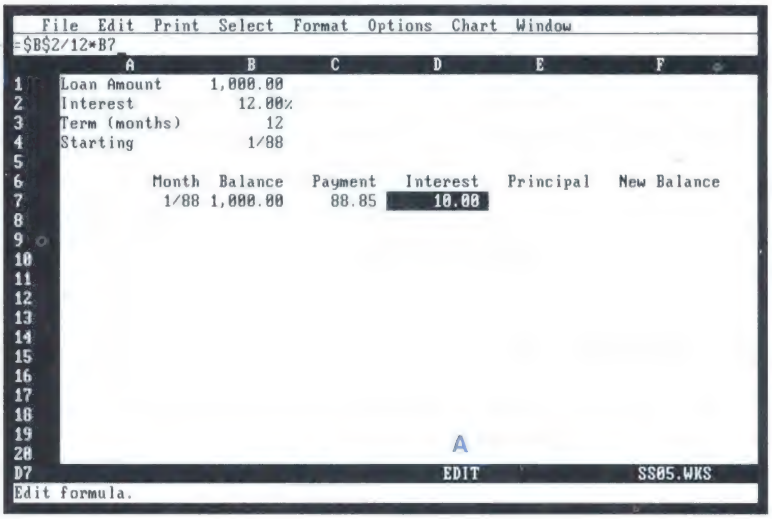
1. Type the formula up to where you want to insert the cell reference.
2. Use the DIRECTION keys to select the cell whose reference you want to include in the formula.

   Works inserts the reference in the formula.
3. Type the remainder of the formula.
4. Press ENTER.

To enter a range reference with point mode

1. Type the formula up to where you want to insert the range reference.
2. Use the DIRECTION keys to select the cell in the upper-left corner of the range you want to include in the formula.
3. Press F8 and use the DIRECTION keys to extend the selection to the other cells you want to include. Works inserts the range reference in the formula.
4. Type the remainder of the formula.
5. Press ENTER.

Editing Your Data



A When you press F2, the status line displays either EDIT or POINT to indicate which mode you are in.

B All editing is done in the formula bar. Editing in the formula bar is just like editing in a text box.

Editing means making changes to numbers, formulas, or text you have already entered into a cell. You can edit one cell at a time. All editing is done in the formula bar.

The easiest way to edit is to retype the contents of the cell. However, if the contents are long, it is easier to retype just the incorrect characters rather than the entire contents.

You can use point mode or editing keys to edit a cell's contents. Press F2 to switch from edit mode to point mode and back again. The status line displays EDIT when you are in edit mode, and POINT when you are in point mode. While in point mode you can use the DIRECTION keys to insert cell and range references into the formula.

Editing a cell's contents is just like editing a text box in a dialog box. All of the editing skills you learned in Chapter 1, "Introduction to Basic Skills," work in editing a cell's contents. The following are the most frequently used editing keys:

Press	To
HOME	Go to the beginning of the contents
END	Go to the end of the contents
LEFT	Go left one character
RIGHT	Go right one character
BACKSPACE	Delete the character to the left of the cursor
DELETE	Delete the character above the cursor
F2	Switch between edit and point mode

To insert characters in the middle of the contents, move the cursor to where you want to insert the character and begin typing. What you type appears to the left of the cursor.

To edit the contents of a cell

1. Select the cell whose contents you want to edit.
2. Press F2.
3. Use the editing keys to make changes.
4. Press ENTER.

Formatting Cells

You can change the appearance of numeric values in a cell by changing the cell's format. Works has seven numeric formats. The table below shows how the numbers 7654.320 and −7654.320 look using each format.

Format Name	Positive Value	Negative Value
General	7654.32	−7654.32
Fixed (3 decimals)	7654.320	−7654.320
Dollar (2 decimals)	$7,654.32	($7,654.32)
Comma (4 decimals)	7,654.3200	(7,654.3200)
Percent (0 decimals)	765432%	−765432%
Exponential (2 decimals)	7.65E+03	−7.65E+03
Logical	True	False

To format cells

1. Select the cells you want to format.
2. From the Format menu, choose the appropriate command.
3. In the Number of Decimals text box, type the number of decimal places you want.

   You do not need to specify the number of decimal places for General format. Works chooses the most accurate method of displaying the entire number when you use General format.
4. Press ENTER.

If you type a number in a cell without formatting the cell, Works uses the General format.

Copying Cells

Often you need the same data in the same format in several cells. You could enter data in and format each cell individually, or you can use Works to copy the contents and format of a cell to other cells for you.

Copying is most useful with formulas. You can type a formula once, and then copy it to all the other cells that will use it. Works adjusts all relative references in the copied formulas for their new location.

Copying with the Fill Right Command

Fill Right copies the first column of selected cells into the selected cells to the right.

To copy cells with Fill Right

1. Select the column of cells you want to copy.
2. Select the cells to the right that you want to fill.
3. From the Edit menu, choose Fill Right.

Copying with the Fill Down Command

Fill Down copies the first row of selected cells into the selected cells below.

To copy cells with Fill Down

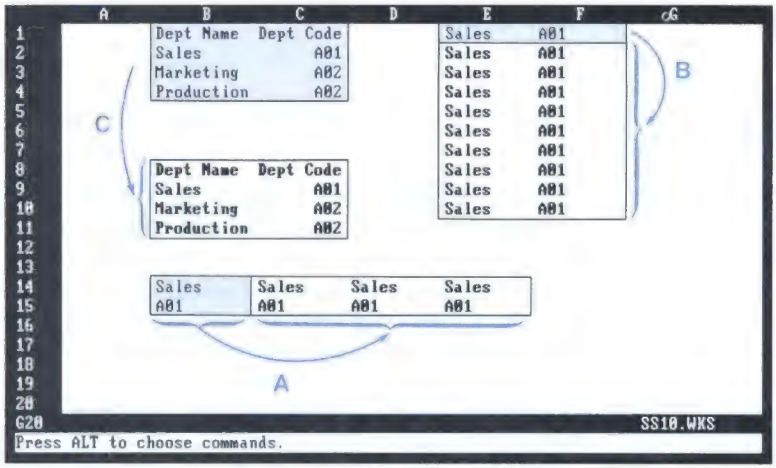
1. Select the row of cells you want to copy.
2. Select the cells below that you want to fill.
3. From the Edit menu, choose Fill Down.

Copying with the Copy Command

Copy makes one copy of the selected cells in another part of the spreadsheet.

To copy cells with Copy

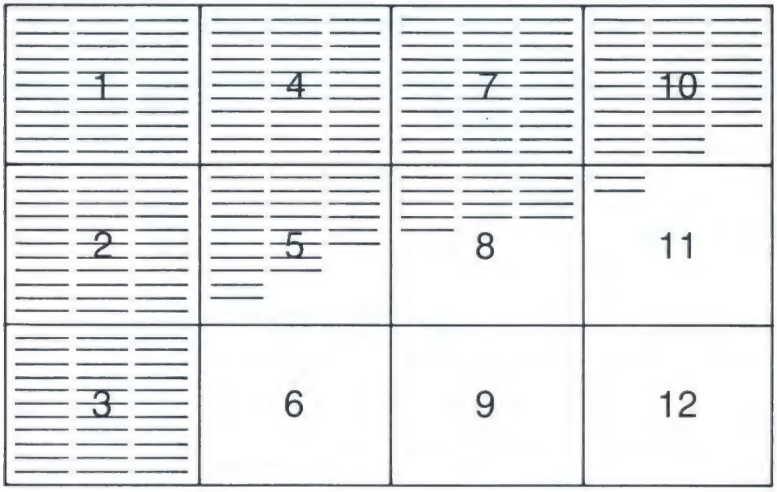
1. Select the cells you want to copy.
2. From the Edit menu, choose Copy.
3. Select the upper-left corner where you want to place the copy.
4. Press ENTER.


A
B
C
Dept Name Dept Code
Sales A01
Marketing A02
Production A02
Sales A01
Sales A01
Sales A01

Printing a Spreadsheet

You can print your entire spreadsheet, or a smaller portion of it called the print area, on your printer.

Large spreadsheets are too big to fit on one piece of paper. When Works prints your spreadsheet, it breaks it into page-size pieces.



Works divides large spreadsheets into pages and prints them in the order shown.

To set the print area

1. Select the cells you want to print.
2. From the Print menu, choose Set Print Area.

   When you print your spreadsheet, Works prints only the area you specified.

To print the spreadsheet

1. From the Print menu, choose Print.
2. Press ENTER.

If you used the Set Print Area command to specify a portion of the spreadsheet, Works prints only that portion. If you didn't use Set Print Area, Works prints the whole spreadsheet.

6 Spreadsheet Reference

This is the reference chapter for the Spreadsheet. It contains information about the commands, about performing spreadsheet tasks, and about other features.

Topics in this chapter are listed in alphabetical order.

A task topic describes the concepts and the procedures for a task. Some task topics describe using one feature or command. Other task topics describe several related features or commands.

A command topic describes the purpose of the command and each of the command's options.

At the end of most topics is a list of related topics.

The best way to learn Works is to use the tutorial, Learning Microsoft Works. The tutorial offers several lessons on basic spreadsheet concepts and how to use the Spreadsheet.

Aligning Values

	Text	Numbers	Errors
General	General	123	ERR
Left	Left	123	ERR
Right	Right	123	ERR
Center	Center	123	ERR

The Style command, on the Format menu, aligns the contents of selected cells. Unless you specify another, Works uses general alignment.

To change alignment

1. Select the cells you want to align.
2. From the Format menu, choose Style.
3. Under Alignment, select an option.
4. Press ENTER.

Calculate Now Command (Options Menu)

The Calculate Now command calculates all of the formulas in the spreadsheet whenever you choose it or press F9.

When the formula bar is active, and the formula you are editing begins with an equal sign, Calculate Now calculates the formula and replaces it with the value of that formula. For example, if you want to enter a number that is the result of a formula, you can enter the formula and choose Calculate Now.

To change a formula to its value

1. Type the entire formula into the formula bar.
2. From the Options menu, choose Calculate Now.

For information on	See
Calculating a spreadsheet	Calculating
Manual calculation	Calculating

Calculating

The Spreadsheet recalculates all formulas that need to be updated whenever you change a cell that a formula refers to. Spreadsheets with many formulas take longer to calculate than spreadsheets with few formulas. The Spreadsheet updates calculations when you finish entering a number or formula. You don't need to wait for a calculation to be completed, however. You can interrupt the calculation at any time to make additional changes or additions.

You use the Manual Calculation command to turn off automatic calculation. Then formulas will not be updated until you choose the Calculate Now command. CALC appears in the status line when the spreadsheet needs to be calculated.

To turn manual calculation on and off

- From the Options menu, choose Manual Calculation.

A mark appears by the command whenever manual calculation is turned on.

To calculate a spreadsheet

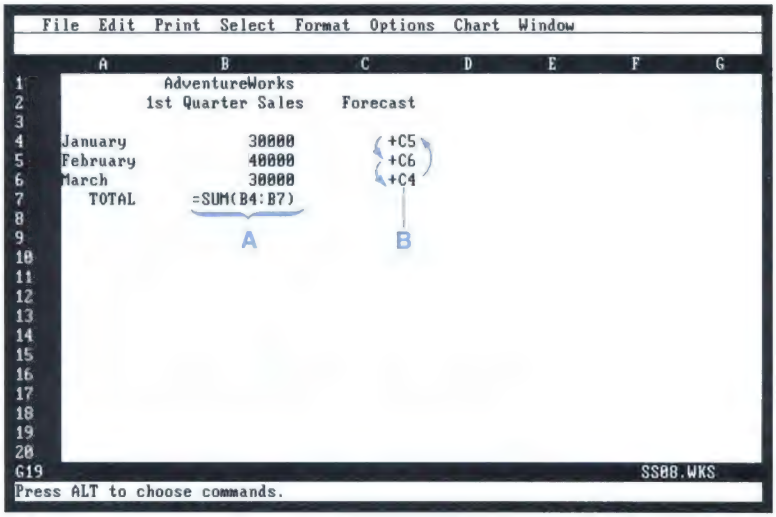
- From the Options menu, choose Calculate Now.

Charts Command (Chart Menu)

You can create a chart from your spreadsheet data.

For information on	See
Charting basics	Chapter 8, Introduction to Charting
Charting commands	Chapter 9, Charting Reference

Circular References



A A formula that refers to itself creates a circular reference.
B A chain of formulas that has no end creates a circular reference.

A circular reference is an error that results when a formula refers to itself. Often a chain of formulas creates a circular reference. For example, a formula in cell E1 may refer to cell E2, which contains a reference to cell E3, which contains a reference back to cell E1.

CIRC appears in the status line when circular references are found during calculation. To correct a circular reference, you should change one of the formulas included in the circle. As soon as the circular reference is corrected, CIRC disappears from the status line.

For information on	See
Using references	References

Clear Command (Edit Menu)

The Clear command erases the contents of selected cells. Cell formats are unaffected.

For information on	See
Clearing cells	Erasing
Deleting columns and rows	Erasing

Column Command (Select Menu)

Shortcut key: SHIFT + F8

The Column command extends the selection to include entire columns. It is most often used before inserting or deleting columns or page breaks.

For information on	See
Inserting columns	Insert Command
Selecting columns or rows	Selecting

Comma Command (Format Menu)

The Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses. Use comma format for financial numbers without a dollar sign.

For information on	See
Using Comma and other number formats	Formatting Numbers

Copy Command (Edit Menu)

Shortcut key: SHIFT + F3

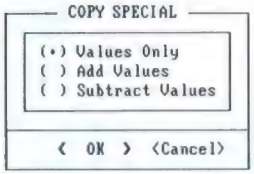
The Copy command copies selected cells to non-adjacent cells on the spreadsheet. You can also copy selected cells to other Works files.

For information on	See
Copying between Works files	Chapter 16, "Exchanging Information Between Tools"
Using Copy	Copying

Copy Special Command (Edit Menu)

The Copy Special command:

- Adds the selected cells to cells in another part of the spreadsheet.
- Subtracts the selected cells from cells in another part of the spreadsheet.
- Copies just the values of the selected cells to another part of the spreadsheet.
- Converts a formula to its value.



Values Only Copies just the value and format in a cell, leaving the formula behind.

Add Values Adds the selected cells to cells in another part of the spreadsheet.

Subtract Values Subtracts the selected cells from cells in another part of the spreadsheet.

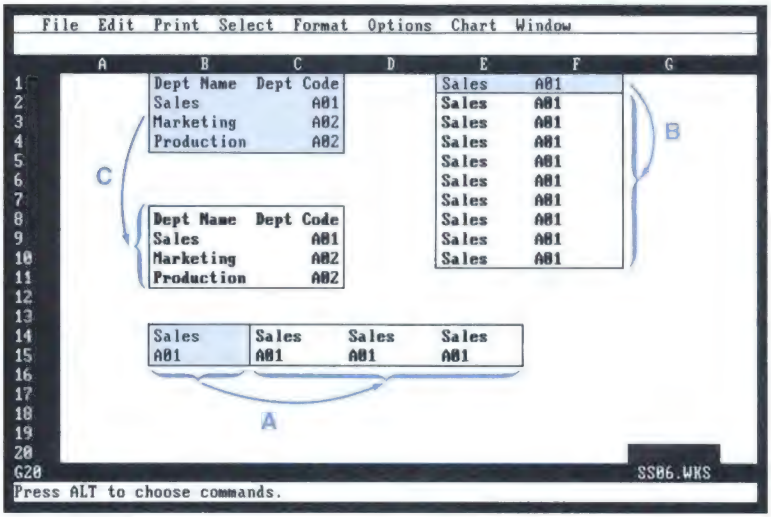
For information on	See
Using Copy Special	Copying

Copying

The Edit menu gives you four commands for copying: Fill Right, Fill Down, Copy, and Copy Special. You use each command in different situations.

The copy commands copy the selected cells' contents and format into other spreadsheet cells or other Works files. This makes it possible to type a formula once and copy it into several cells, making it faster to create a spreadsheet and reducing the chance for error.

The selected cells' contents and format replaces the contents and format of the spreadsheet cells you are copying into. Copied relative references adjust for their new location. For information on how copied relative references work, see "References."



A Fill Right copies the first column of selected cells into the selected cells to the right.

B Fill Down copies the first row of selected cells into the selected cells below.

C Copy makes one copy of the selected cells on another part of the spreadsheet.

Using Fill Right and Fill Down

The Fill Right and Fill Down commands copy selected hidden and displayed cells into adjacent columns or rows.

To copy with Fill Right

Fill Right copies the leftmost column of selected cells into the selected cells immediately to the right.

1. Select the cells you want to copy and the cells immediately to the right into which the copies will be placed.
2. From the Edit menu, choose Fill Right.

To copy with Fill Down

Fill Down copies the top row of selected cells into the selected cells immediately below.

1. Select the cells you want to copy and the cells immediately below into which the copies will be placed.
2. From the Edit menu, choose Fill Down.

Using Copy

Copy makes one copy of the selected cells. In most cases, the copy will not be adjacent to the selected cells. You can also use Copy to copy the selected cells into another Works file.

To copy within a spreadsheet using Copy

1. Select the cells you want to copy.
2. From the Edit menu, choose Copy.
3. Select the upper-left corner cell of the range where you want to place the copy.

   If you select a range, Works fills the range with the copied information.
4. Press ENTER.

To repeat the previous Copy command

You can make multiple copies of the selected cells by repeating the previous Copy command. Use this procedure when you need to place copies in several non-adjacent parts of a spreadsheet.

1. Select the cell in the upper-left corner of the range where you want to place the next copy.
2. Press SHIFT + F7.

To copy cells to another Works file

You can copy spreadsheet cells to another Spreadsheet file, a Word Processor file, or a Database file.

1. Select the cells you want to copy.
2. From the Edit menu, choose Copy.
3. From the Window menu, select the Works file you want to copy into.
4. Move to the place where you want to place the copy.
5. Press ENTER.

Using Copy Special

The Copy Special command:

- Adds the selected cells to cells in another part of the spreadsheet.
- Subtracts the selected cells from cells in another part of the spreadsheet.
- Copies just the values of the selected cells to another part of the spreadsheet.
- Converts a formula to its value.

To copy with Copy Special

1. Select the cells you want to copy, add, or subtract.
2. From the Edit menu, choose Copy Special.
3. Select the upper-left corner of the range of cells where you want to copy, add, or subtract values.
4. Press ENTER.
5. Select an option from the Copy Special dialog box.
6. Press ENTER.

Depending on the option you selected from the dialog box, the values of these cells will be added to, subtracted from, or copied to the other spreadsheet cells.

To convert formulas to values

1. Select the cells whose values you want to convert.
2. From the Edit menu, choose Copy Special.
3. Press ENTER.
4. In the Copy Special dialog box, select Values Only.
5. Press ENTER.

Using CONTROL + ENTER

You can type the same formula, number, or text into a range of cells simultaneously by using CONTROL + ENTER.

To simultaneously type the same data into a range

1. Select the range you want to enter information into.
2. Type the cell contents in the formula bar.
3. Press CONTROL + ENTER.

Dates and Times

You can enter dates or times in cells and use them in formulas. Dates can be entered in either long form (Apr 15, 1988) or short form (4/15/88). Times can be entered in either 24-hour form (14:30:00) or 12-hour form (2:30 PM). The following sections describe how to use dates and times in cells and formulas.

Using Dates

The Works calendar begins with January 1, 1900, and ends with June 3, 2079. You can use any date between these two dates in a cell or formula. If you use a date outside this range, Works interprets it as text.

You can enter dates into cells in either long form or short form. The following table shows the long and short forms Works recognizes.

To enter	Type the date like this
Month, day, year — long form	Oct 30, 1960
Month, year — long form	Oct, 1960
Month, day — long form	Oct 30
Month — long form	Oct
Month, day, year — short form	10/30/1960
Month, year — short form	10/1960
Month, day — short form	10/30

Note The Country options in the Settings command dialog box control whether the month comes before or after the day in dates. When the selected Country option is US, the month comes first as in the table above. You can select date formats for your country. For more information, see Chapter 2, "Using Basic Skills."

You can enter a date into a formula by entering it in a short form and enclosing it in single quotation marks ('). For example, the formula ='3/30/88'-'1/1/88' calculates the number of days between the two dates.

You can enter a year as two digits (60 instead of 1960). Works assumes the current century.

Tip Works can do date arithmetic because it assigns an integer to each day of its calendar. January 1, 1900 is day 1, January 2 is day 2, and so on through June 3, 2079 (day 65534). For example, if you enter the formula ='3/30/88'-'1/1/88', Works converts the dates to integers and solves the formula as 32232 − 32143, giving the answer 89, meaning 89 days.

You can enter a number in a cell and format it to show a date. For example, if you enter 32767 in a cell, you can use the Format menu's Time/Date command to display the number as the date Sep 16, 1989.

Using Times

The Works clock begins with 12:00:00 P.M. and ends with 11:59:59 P.M. You can use any time in a cell or formula.

You can enter times in either 24-hour form or 12-hour form. The following table shows the 24- and 12-hour forms Works recognizes.

To enter	Type the time like this
Hour, minute, second — 24-hour form	14:30:00
Hour, minute — 24-hour form	14:30
Hour, minute, second — 12-hour form	2:30:00 PM
Hour, minute — 12-hour form	2:30 PM
Hour — 12-hour form	2 PM

You can enter times into a formula using 12-hour form and enclosing each one in single quotation marks ('). For example, the formula ='2:30 PM'-'8:00 AM' calculates the elapsed time between the two times.

Tip Works can do time arithmetic because it assigns a decimal fraction to hours, minutes, and seconds of the day. 12:00:00 P.M. is 0.0 and 11:59:59 P.M. is 0.999. For example, if you enter the formula ='2:30 PM'-'8:00 AM', Works converts times to decimal fractions and solves the formula as 0.604 − 0.333, giving the answer 0.270.

You can enter a number in a cell and format it to show a time. For example, if you enter 0.6 in a cell, you can use the Format menu's Time/Date command to display the number as the time 2:24 PM.

Entering the Current Date or Time in a Cell

You can use two special keys to enter the current date or time in a cell. Works does not update dates and times entered with this method. Use the NOW function for automatic date and time updating.

To insert the current date

Works enters the date in a form similar to 10/30/87.

1. Select a cell.
2. Press CONTROL+;
3. Press ENTER.

To insert the current time

Works enters the time in a form similar to 2:30 PM.

1. Select a cell.
2. Press CONTROL + SHIFT + ;
3. Press ENTER.

For information on	See
Country setting option in dates	Chapter 2, "Using Basic Skills"
NOW function	Chapter 7, "Spreadsheet and Database Functions"
Time/Date dialog box	Time/Date Command

Define Command (Chart Menu)

You can create a chart from your spreadsheet data.

For information on	See
Charting basics	Chapter 8, "Introduction to Charting"
Charting commands	Chapter 9, "Charting Reference"

Delete Command (Edit Menu)

The Delete command removes selected columns or rows from the spreadsheet. To delete a row, select the entire row first. To delete a column, select the entire column first. Deleted information cannot be recovered.

For information on	See
Clearing cells	Erasing
Deleting columns and rows	Erasing

Delete Page Break Command (Print Menu)

The Delete Page Break command removes a manual page break you inserted with the Insert Page Break command. To delete a horizontal page break, select

the entire row containing the page break mark first. To delete a vertical page break, select the entire column containing the page break mark first.

For information on	See
Deleting a page break	Page Breaks and Pagination

Dollar Command (Format Menu)

The Dollar command formats selected cells by inserting a leading dollar sign ($) and a comma every three places (e.g., if you choose two decimal places, 1234 becomes $1,234.00). Negative numbers are enclosed in parentheses. Use dollar format to present financial numbers.

For information on	See
Using Dollar and other formats	Formatting Numbers

Editing

Editing is the process of changing information that has already been entered on the spreadsheet. You are editing whenever you correct a misspelled word, change a formula, or replace an existing cell's contents.

You can edit at any time. Begin by selecting the cell to be changed and pressing F2. This activates the formula bar. Editing in a formula bar is just like editing in a text box. The same editing keys are used. Following are some of the basic editing keys:

Press	To
LEFT	Move the cursor left one character
RIGHT	Move the cursor right one character
HOME	Move the cursor to the beginning of the cell contents
END	Move the cursor to the end of the cell contents
SHIFT + DIRECTION key	Select characters in the direction of the arrow
BACKSPACE	Delete the character to the left of the cursor or the selected characters

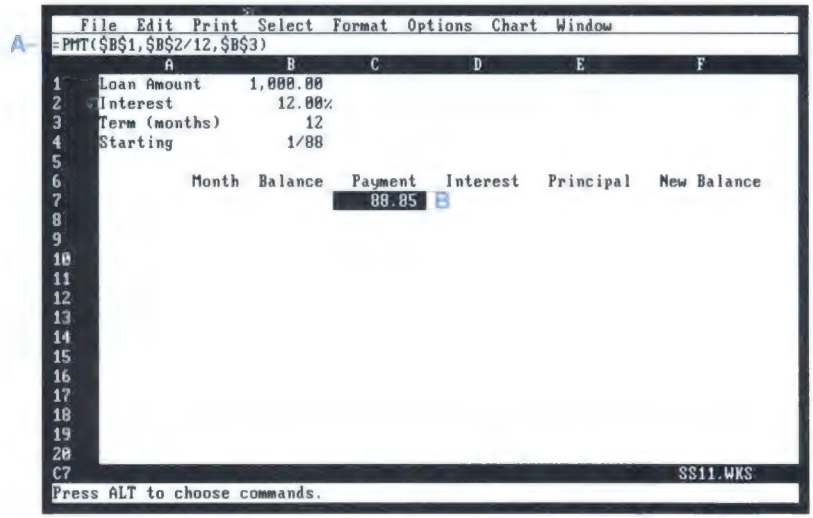
Press	To
DELETE	Delete the characters under the cursor or the selected characters
F2	Switch between edit and point mode

After you finish typing your changes, press ENTER to place your changes in the cell. Your changes are not made until you press ENTER. If you change your mind during editing, press ESC to cancel the changes and leave the cell in its original condition.

To edit the contents of a cell

1. Select the cell whose contents you want to edit.
2. Press F2.
3. Use the editing keys to make changes.
4. Press ENTER to place the new contents in the cell.

Entering



A Use the formula bar to enter and edit numbers, formulas, or text in the active cell.

B The active cell displays the text or the value of formulas and numbers entered in the formula bar.

You can enter text, numbers, or formulas in each spreadsheet cell. Once they are entered, you can change them at any time by editing. You enter and edit the contents of a cell using the formula bar. The following sections describe how to enter text, numbers, and formulas. For information on editing, see Editing.

Entering Text

Text can be labels, addresses, phone numbers, department names, or any other information that is not a number or formula. If you enter text that is longer than the width of the cell, Works displays the excess text in the cells to the right if the cells are empty. Even though all of the text you enter may not be displayed, it is still stored in the cell. If you use numbers as descriptions, such as a part number, you must tell Works to interpret them as text by entering a leading quotation mark (e.g., "20184).

To enter text

1. Select the cell you want to enter the text in.
2. In the formula bar, type the text.
3. Press ENTER.

Entering a Number

You can enter a number into a cell using a variety of formats:

2234 2,234 223.0543 −223 (223) 10 3/4
2.23E02 10% $12.50

When you enter a number that contains a dollar sign ($) before the number or a percent sign (%) after the number, Works formats the cell as a dollar amount or a percentage automatically.

Works displays ###### in a cell if the formatted number is too long to display within the width of the cell. If you widen the column enough, Works displays the number in the cell's format. See Width Command for more information on column width.

To enter a number

1. Select the cell you want to enter the number in.
2. In the formula bar, type the number.
3. Press ENTER.

Entering a Formula

A formula is an equation that calculates a new value from existing values. For example, =A1+A2 is a formula that adds the values in cells A1 and A2. Formulas begin with an equal (=) sign.

Formulas can contain cell or range references. The formula above contains two cell references, A1 and A2. To put a cell or range reference in a formula you can either type the reference or use point mode to automatically insert the desired reference.

To enter a formula

1. Select the cell you want to enter the formula in.
2. Type an equal sign (=).
3. In the formula bar, type the formula.
4. Press ENTER.

Using Point Mode to Insert a Reference

You can use point mode to automatically insert a cell or range reference into a formula by selecting the cell or range in the spreadsheet. The reference in the formula bar reflects the current selection you make with the highlight. When you have selected the appropriate cell or range, you simply continue typing the rest of the formula.

The Select menu commands are available when you use point mode to help select and insert information into formulas. You can insert row and column references into the formula, go to a specific cell or range and insert its reference into the formula, or search for specific information and have the reference of the cell containing the information inserted into the formula.

To enter a reference with point mode

1. Type the formula up to where you want to insert the reference.
2. Select the cells you want to include in the formula.

   To insert a cell reference, use the movement keys to select the cell. To insert a range reference, use the F8 or SHIFT key to extend the selection. You can also use the Select menu's Go To command to select a named range.
3. Type the rest of the formula.
4. Press ENTER

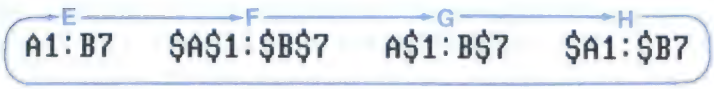
Using Go To to Insert a Range

You can use the Go To command to insert a range name into a formula.

To insert a range name

1. Type the formula up to where you want to insert the reference.
2. From the Select menu, choose Go To.
3. In the Existing Names list box, select a range name.
4. Press ENTER.
5. Type the rest of the formula.
6. Press ENTER.

Entering an Absolute or Mixed Reference



A Relative
B Absolute
C Mixed
D Mixed

E Relative
F Absolute
G Mixed
H Mixed

If you want to put an absolute or mixed reference into a formula, you can use the F4 key to insert dollar signs into the reference. Each time you press F4 it moves to the next reference type in the circle of four reference types. When the proper type appears, continue typing your formula.

To type an absolute or mixed reference

1. Type your formula up to the point where you want a mixed or absolute reference.
2. Use point mode to select the cell or range you want in the formula.
   Works inserts a relative reference for the selected cell or range.
3. Press F4 until the desired reference type appears in the formula bar.
4. When the appropriate reference is shown, type the rest of the formula.
5. Press ENTER.

Tip

Enter a negative number using a minus sign or parentheses

−145 or (145)

Works lets you enter negative numbers in two ways: by typing a minus sign (−) before the number, or by putting the number in parentheses. Both ways yield negative numbers.

Tip

Use entry formats to speed formatting

Normally, entering and formatting numbers is a two-step process. First you type the number, then you format it with one of the Format menu commands.

You can use entry formats to enter the number and its format at the same time. Works has four entry formats for entering percentages, dollar amounts, and short- and long-form dates.

To enter	Type
Percentage	12.45%
Dollar signs	$12.45
Short-form dates	3/21/86 3/21 3/86
Long-form dates	Mar 21, 1986 Mar 21 Mar 86 Mar
12-hour times	2:30:00 PM 2:30 PM 2 PM
24-hour times	14:30:00 14:30

Tip

Enter stock market prices as fractions

You can enter the price of a stock as a fraction, and Works will convert it to a decimal fraction. For example, if you enter 10 3/4, Works converts it to 10.75.

Tip

Use CONTROL+' to copy formatted values

You can use the shortcut key CONTROL+' to enter the contents and format of the cell above the active cell into the active cell.

To copy the formatted value

1. Move the highlight beneath the cell you want to copy.
2. Press CONTROL+'

Erasing

Works has two ways to erase the contents from cells: clearing and deleting. Clearing erases the contents of the selection, leaving the empty cells and their formats. Deleting removes entire rows or columns of cells from the spreadsheet, leaving nothing behind. Cleared or deleted information cannot be recovered.

Clearing

The Clear command erases the contents of the selection. The cell and its format remain in the spreadsheet. For example, if cell A1 contains the number 10 formatted in dollar format, clearing the cell removes the number 10, but leaves the cell with dollar format. Any new number or formula typed into the cell would be displayed in dollar format.

To clear a range of cells using the Clear command

1. Select the range of cells you want to clear.
2. From the Edit menu, choose the Clear command.

To clear a cell using BACKSPACE

1. Select the cell you want to clear.
2. Press BACKSPACE.
3. Press ENTER.

Deleting

The Delete command removes entire selected columns or rows from the spreadsheet. The cell contents and format are lost.

When you delete one or more columns, Works fills the gap with the remaining columns. The columns to the right of the deleted columns shift to the left into the vacated columns. Likewise, Works fills the gap left by deleted rows. The rows below the deleted rows shift upward into the vacated rows.

Relative references adjust to compensate for deleted rows and columns. If you delete cells that other formulas refer to, Works replaces the references to the deleted cells with the error value ERR.

To delete rows or columns

1. Select the rows or columns you want to delete.
2. From the Edit menu, choose Delete.

For information on	See
Selecting columns or rows	Selecting

Exponential Command (Format Menu)

The Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, 1234567 becomes 1.23E+06). The exponent can range from −300 to +300. Negative numbers have a leading minus sign.

For information on	See
Using Exponential and other formats	Formatting Numbers

Fill Down Command (Edit Menu)

The Fill Down command copies the top row of a selection into the adjacent selected cells below.

For information on	See
Using Fill Down	Copying

Fill Right Command (Edit Menu)

The Fill Right command copies the leftmost column of a selection into the adjacent selected cells to the right.

For information on	See
Using Fill Right	Copying

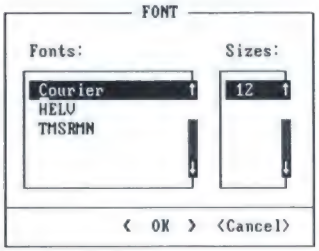
Fixed Command (Format Menu)

The Fixed command formats selected cells by showing the specified number of decimal places (e.g., if you choose two decimal places, then 1234.560 becomes 1234.56). Negative numbers have a leading minus sign. Use fixed format whenever you need to control the number of displayed decimal places.

For information on	See
Using Fixed and other formats	Formatting Numbers

Font Command (Print Menu)

The Font command selects the font and font size to use when printing the spreadsheet. Only the fonts and font sizes your printer can produce are shown in the list boxes. Fonts do not appear on the screen. Works prints the entire spreadsheet using the selected font and font size.



Fonts Select the font you want to use for printing the spreadsheet. Use a fixed-pitch font for printing spreadsheets. For information on fixed-pitched fonts, see Appendix B, "Printing, Fonts, and Styles."

Sizes Select the font size you want for printing the spreadsheet.

To select font and font size

1. From the Print menu, choose Font.
2. In the Fonts list box, select a font.
3. In the Sizes list box, select a font size.
4. Press ENTER.

For information on	See
Printing	Appendix B, "Printing, Fonts, and Styles"
Using fonts and font sizes for your printer	Chapter 2, "Using Basic Skills"

Formatting Numbers

You can use the commands on the Format menu to change the appearance of numeric values in cells.

Numeric Formats	Two Decimals	Three Decimals
General	12345.6789	0
Fixed...	12345.68	0.000
Dollar...	$12,345.68	$0.000
Comma...	12,345.68	0.000
Percent...	1234567.89%	0.000%
Exponential...	1.23E+04	0.000E+00
Logical	TRUE	FALSE

General Format

Cells initially display numeric values in General format. The General command formats selected cells as precisely as possible, using an integer (123), decimal fraction (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

Fixed Format

The Fixed command formats selected cells by showing the specified number of decimal places (e.g., if you choose two decimal places, then 1234.560 becomes 1234.56). Negative numbers are preceded by a minus sign.

Dollar Format

The Dollar command formats selected cells by inserting a leading dollar sign ($) and commas every three places (e.g., if you choose two decimal places, 1234567 becomes $1,234,567.00). Negative numbers are enclosed in parentheses.

Comma Format

The Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses.

Percent Format

The Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, .43 becomes 43.00%). Negative percentages are preceded by a minus sign.

Exponential Format

The Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, 1234567 becomes 1.23E+06). The exponent can range from −300 to +300. Negative numbers are preceded by a minus sign.

Logical Format

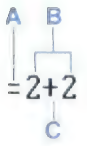
The Logical command formats selected cells to display either TRUE or FALSE in place of numeric values. All cells whose values are zero display FALSE. All nonzero cells display TRUE.

To format cells

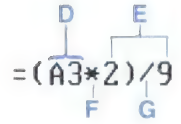
1. Select the cells you want to format.
2. From the Format menu, choose the appropriate command.
3. In the Number of Decimals text box, type the number of decimals you want.

   If you are using the General or Logical command, you don't need to type a number in the text box.
4. Press ENTER.

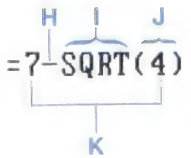
Formulas



A Starts with an equal sign.
B Number
C Addition operator



D Cell reference
E Number
F Multiplication operator
G Division operator



H Subtraction operator
I Square Root function
J Function argument
K Number

A formula is an equation that calculates a new value from existing values.

Formulas are built from operators (e.g., + − * /), operands (e.g., numbers, or cell and range references), and functions (e.g., SUM(A1:A10)).

A formula can be as simple as =A1+A2, which adds the values in cells A1 and A2. A formula can also be complex:

=PI()/2−ATAN(A1/SQRT(1−A1^2))

How Works Evaluates a Formula

Works calculates the answer to formulas through a process called "evaluation." Works follows standard algebraic rules when evaluating formulas:

- Equations are evaluated from left to right.
- The contents of the innermost set of parentheses are evaluated first.
- Operators are evaluated in their order of precedence.

The list below shows the operators you can use and their order of evaluation. Operators higher in the list are evaluated before operators lower in the list. If two or more operators have the same order of evaluation, Works evaluates them from left to right.

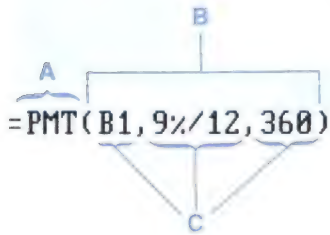
Operator	Name	Order of Evaluation
^	Exponentiation	First
−	Negative (e.g., −8)	Second
+	Positive (e.g., +8)	Second
*	Multiplication	Third
/	Division	Third
+	Addition	Fourth
−	Subtraction	Fourth
=	Equal to	Fifth
<>	Not equal to	Fifth
<	Less than	Fifth
>	Greater than	Fifth
<=	Less than or equal to	Fifth
>=	Greater than or equal to	Fifth
~	Not	Sixth
|	Or	Seventh
&	And	Seventh

To enter a formula

1. Select the cell you want the formula in.
2. In the formula bar, type an equal sign (=).
3. Type the formula.
4. Press ENTER.

Using Functions in Formulas

A function is a built-in calculation that is similar to an arithmetic operator, such as + or −, in that it produces a new value from other values.



A Function name
B Parentheses
C Arguments separated by commas

Each function consists of the function name, a set of parentheses, and arguments (the values the function uses to produce a new value) separated by commas. Most functions have one or more arguments, although some functions, such as FALSE(), have no arguments.

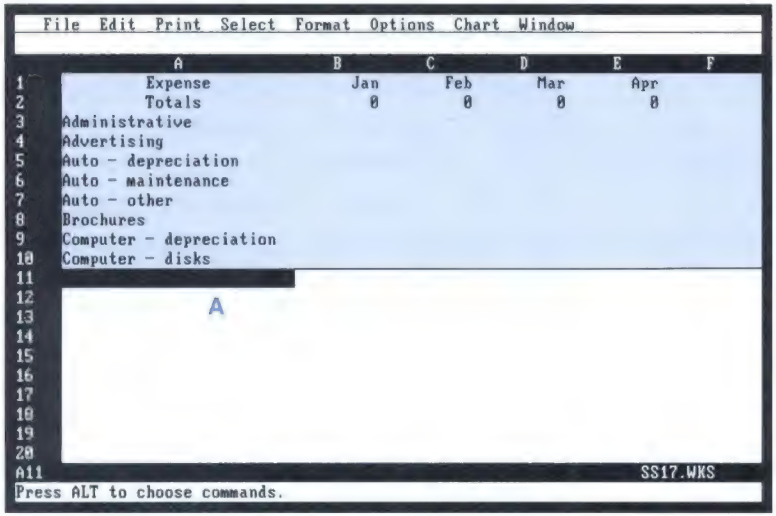
An argument must be a number or an expression that results in a number. This means that an argument can be a number, a cell or range reference, another function, or any combination such as B2/12. Some functions, such as ROWS, can only use a reference as an argument.

Since functions are like operators, you can use them as often as necessary anywhere in your formula.

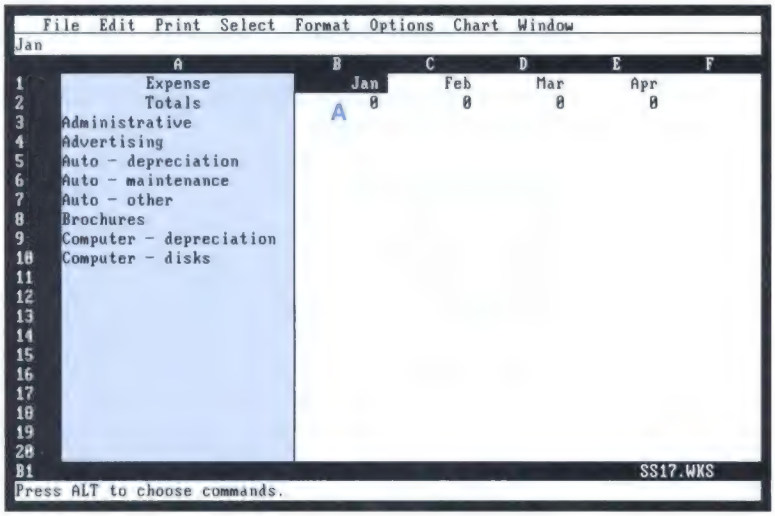
For information on	See
Editing a formula	Editing
Entering a formula	Entering
Using functions	Chapter 7, "Spreadsheet and Database Functions"
Using references	References

Freeze Titles Command (Options Menu)

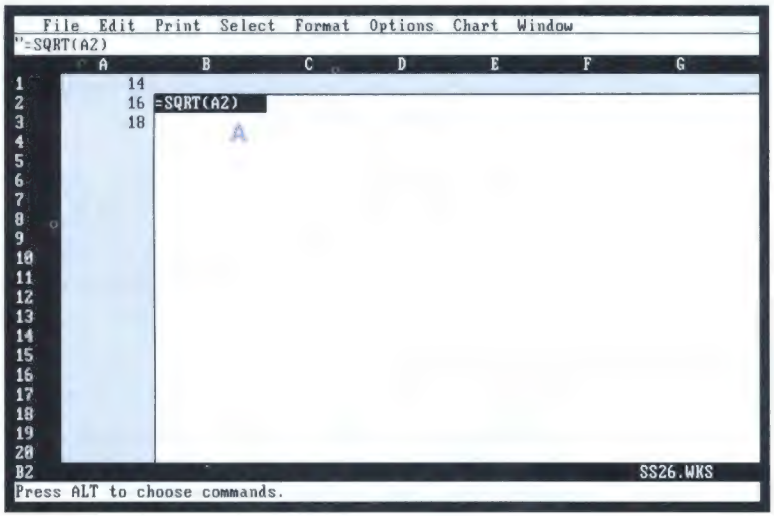
The Freeze Titles command specifies the rows and/or columns you do not want to scroll. It is most useful for keeping column or row headings on the screen as you scroll through a large spreadsheet.



A To freeze rows, place the highlight in column A below the rows you want to freeze.



A To freeze columns, place the highlight in row 1 to the right of the column you want to freeze.



A To freeze both columns and rows, place the highlight below the rows and to the right of the columns you want to freeze.

As the above diagram shows, Works freezes the columns and rows above or to the left of the active cell. You cannot move the highlight into frozen rows or columns. However, you can use the Go To command to select a cell or range in the frozen rows or columns.

To freeze rows or columns

1. Move the highlight below the rows or to the right of the columns you want to freeze.
2. From the Options menu, choose Freeze Titles.

To change which row and columns are frozen, you must first use the Unfreeze Titles command.

To unfreeze rows or columns

The Unfreeze Titles command reverses the Freeze Titles command. Once they are unfrozen, you can scroll previously frozen rows and columns off the screen.

- From the Options menu, choose Unfreeze Titles.

Functions

Functions are built-in equations you can use in formulas to quickly and easily solve complicated calculations.

For information on	See
Using functions in formulas	Formulas Chapter 7, "Spreadsheet and Database Functions"

General Command (Format Menu)

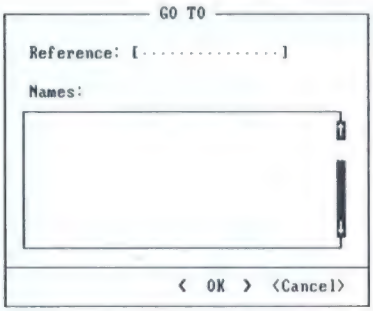
The General command formats selected cells as precisely as possible, using an integer (123), decimal fraction (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

For information on	See
Using General and other formats	Formatting Numbers

Go To Command (Select Menu)

Shortcut key: F5

The Go To command selects the cell or range whose reference or name you type or select in the dialog box. You can use the Go To command to move to a specific location in the spreadsheet, or insert range names into formulas.



Reference Goes to the cell or range reference you type. If you type a reference, you do not need to select a range name from the list box.

Names Lists the existing range names in your spreadsheet.

To go to a range or cell

1. From the Select menu, choose Go To.
2. In the Names list box, select a range name.

   You can also type a range or cell reference in the Reference text box.
3. Press ENTER.

You can also use the Go To command to insert a range name into a formula. Works selects the range and places the range name in the formula. Using Go To to insert a name in a formula is helpful if you've forgotten the range name or cell reference.

To use Go To to insert a range name

1. Type the formula up to where you want to insert the range name.
2. Follow the steps above to go to a range or cell.
3. Continue typing your formula.

For information on	See
Entering range names in formulas	Entering

Hiding

You can hide columns to prevent them from displaying or printing. Columns are hidden from view until you want to redisplay them. You cannot scroll through or enter information in hidden column cells.

To hide columns

1. Select a cell in each column you want to hide.
2. From the Format menu, choose Width.
3. Type *0* (zero).
4. Press ENTER.

To redisplay hidden columns

You redisplay columns by using the Go To command to select cells in each hidden column, then changing the width of the cells to a number greater than zero.

1. From the Select menu, choose the Go To command.
2. In the Reference text box, type a cell or range reference within the hidden columns.
3. Press ENTER.
4. From the Format menu, choose Width.
5. In the Width text box, type a number greater than 0 (zero).
6. Press ENTER.

   Works widens the hidden columns to the specified width.

Insert Command (Edit Menu)

The Insert command inserts entire blank columns or rows between existing columns and rows. Inserted columns move existing columns to the right, but the columns to the left do not move. Inserted rows move existing rows downward, but the rows above do not move. Works inserts as many rows or columns as you have selected. You must select entire rows or columns before new rows and columns can be inserted.

To insert columns or rows

1. Select the columns or rows where you want to insert columns or rows.
2. From the Edit menu, choose Insert.

For information on	See
Selecting entire columns or rows	Selecting

Insert Page Break Command (Print Menu)

The Insert Page Break command inserts a page break above or to the left of the selected column or row. An entire column or row must be selected before you can insert a page break.

For information on	See
Using page breaks	Page Breaks and Pagination

Keyboard

The following tables show what keys to press to perform various tasks. For some tasks you use key combinations, pressing and holding the first key, then pressing the next key. These key combinations are shown like this: SHIFT + F3. Many of the keys you press are shortcut keys for commands on the menu.

Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Reference	F4
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Select row	CONTROL + F8
Select column	SHIFT + F8
Select spreadsheet	SHIFT + CONTROL + F8
Calculate Now	F9
Exit Charting	F10
View Chart	SHIFT + F10

Movement and Selecting Keys

To move around a file or to move the cursor or the highlight, press the appropriate movement keys. To select cells and extend the selection, move to the cell(s) you want to select, press F8, then press the appropriate movement keys; or press SHIFT plus the appropriate movement keys. To collapse a selection, press ESCAPE.

To move	Press
Left one cell	LEFT
Right one cell	RIGHT
Up one cell	UP
Down one cell	DOWN

To move	Press
Left one cell in range	SHIFT + TAB
Right one cell in range	TAB
Up one cell in range	SHIFT + ENTER
Down one cell in range	ENTER
Next unlocked cell	TAB
One block left	CONTROL + LEFT
One block right	CONTROL + RIGHT
One block up	CONTROL + UP
One block down	CONTROL + DOWN
One screen left	CONTROL + PAGE UP
One screen right	CONTROL + PAGE DOWN
One screen up	PAGE UP
One screen down	PAGE DOWN
To beginning of row	HOME
To end of row	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Quit EXTEND/Collapse selection	ESCAPE

To select	Press
Range	SHIFT + movement keys F8, then movement keys
Column	SHIFT + F8
Row	CONTROL + F8
Entire spreadsheet	SHIFT + CONTROL + F8

Special Spreadsheet Keys

To	Press
Enter into a range	CONTROL + ENTER
Copy cell above	CONTROL + '
Enter current date	CONTROL + ;
Enter current time	SHIFT + CONTROL + ;

Layout Command (Print Menu)

The Layout command lets you specify margins and page sizes for your printed spreadsheet.

For information on	See
Laying out pages	Printing and Page Layout, in Chapter 3

Locks

You lock a cell to prevent its contents or format from being changed. All cells are locked until you unlock them. Once you choose the Protect command, the contents of locked cells cannot be changed until you choose Protect again.

For information on	See
Locking and protecting cells	Protect Command

Logical Command (Format Menu)

The Logical command formats selected cells to display either TRUE or FALSE in place of numeric values. Any cell whose value is zero displays FALSE. All nonzero cells display TRUE.

For information on	See
Using Logical and other formats	Formatting Numbers

Manual Calculation Command (Options Menu)

The Manual Calculation command turns the Spreadsheet's automatic calculation off and on. While automatic calculation is turned off, you can calculate the spreadsheet by choosing the Calculate Now command or by pressing F9.

Choose Manual Calculation again to turn automatic calculation back on.

For information on	See
Calculating a spreadsheet	Calculating

Move Command (Edit Menu)

The Move command moves the contents and format of selected cells to another part of the spreadsheet. The selected cells are left blank and the cells at the new location are replaced with the moved cells. Works adjusts all references to the moved cells.

To move cells

1. Select the cells you want to move.
2. From the Edit menu, choose Move.
3. Select the upper-left corner cell of the range where the selected cells are to be moved.
4. Press ENTER.

Moving Columns and Rows

If you move entire columns, the columns are inserted into their new location. Inserted columns move existing columns to the right, but the columns to the left do not move. If you move entire rows, the rows are inserted into their new location. Inserted rows move existing rows downward, but the rows above do not move.

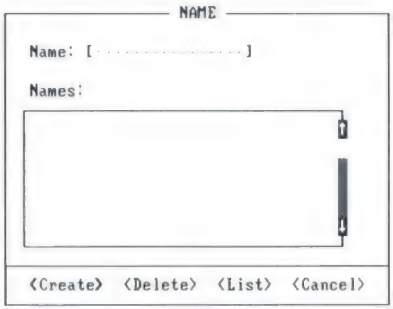
To move columns or rows

1. Select the columns or rows you want to move.
2. From the Edit menu, choose Move.
3. Select any entire column or row before which you want to insert the selection.
4. Press ENTER.

For information on	See
Selecting columns and rows	Selecting

Name Command (Edit Menu)

The Name command creates a name for a cell or range. You can also use this command to delete range names, change the reference for an existing range name, or insert a list of range names and references into the spreadsheet.



Name You can enter a name for the selected cell or range. Works proposes either the text in the active cell, or the text in one of the cells adjacent to the active cell for the range name. You can replace the proposed name by typing a new name.

Names Lists the existing range names.

Create Creates a new range name.

Delete Deletes the range name selected in the Names list box.

List Copies the range names and references in the Names list box into selected cells in the spreadsheet. If a single cell is selected, Works will copy all range names and references. If a range is selected, Works copies only as many range names and references as will fill the selection.

To name a range

1. Select the range you want to name.
2. From the Edit menu, choose Name.
3. In the Name text box, type the range name.
4. Choose the Create button.

To delete a range name

1. From the Edit menu, choose Name.
2. In the Names list box, select the range name you want to delete.
3. Choose the Delete button.

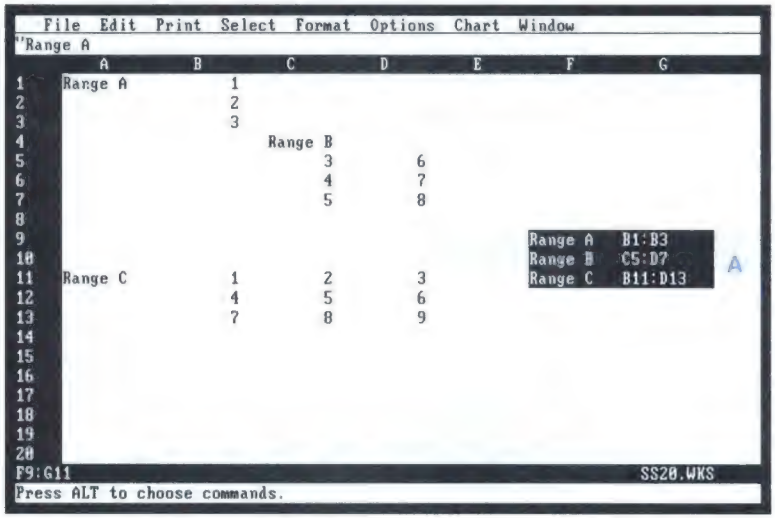
When you delete a range name, the references within formulas change from range names to range references.

To change the reference of an existing name

1. Select the new range to assign to the name.
2. From the Edit menu, choose Name.
3. In the Names list box, select the name whose range you want to change.

Note When you change the range assigned to a name, all formulas referring to the old range now refer to the new range. If you don't want your formulas to refer to the new range, delete the range name and then create it again with the new range.

Inserting a Range List into a Spreadsheet



A A range list shows the names and range references of all name ranges in the spreadsheet.

A range list is the name and reference of each named range in your spreadsheet. You use the Name command to copy range names and references in the Names list box into your spreadsheet. Once copied, the range names and references become text. Having the range list in your spreadsheet helps to document the spreadsheet contents and helps others locate specific information.

To insert a range list into a spreadsheet

1. Select the upper-left corner cell of where the range list will be displayed.

   If you select a range, Works fills the range with the names and references. If the selection is too small, Works fills just the selected cells.
2. From the Edit menu, choose Name.
3. Choose the List button.

For information on	See
Using range names	Ranges

New Command (Chart Menu)

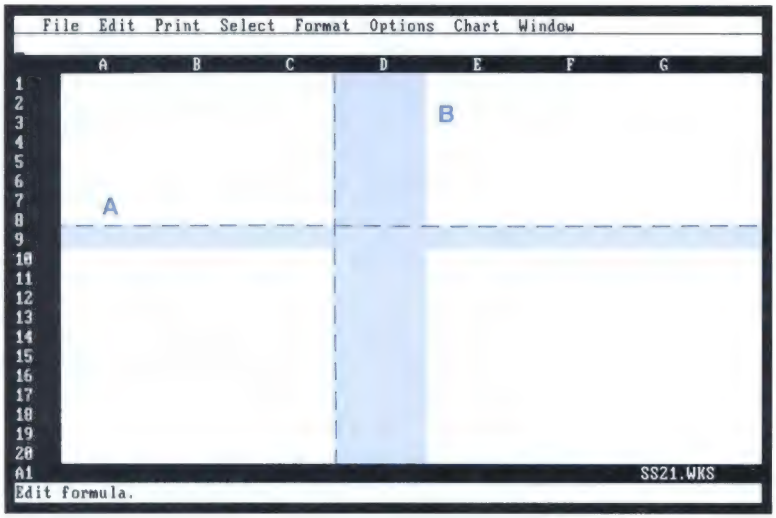
You can create a chart from your spreadsheet data.

For information on	See
Charting basics	Chapter 8, "Introduction to Charting"
Charting commands	Chapter 9, "Charting Reference"

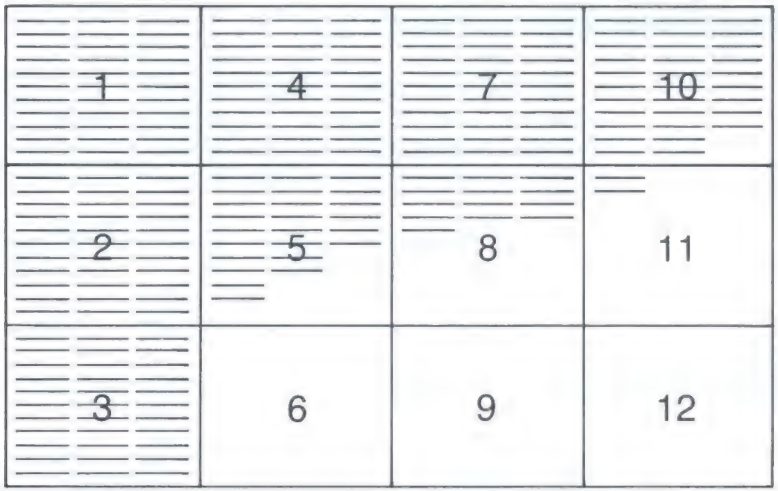
Page Breaks and Pagination

Works prints until the page is full or a page break is encountered. A page break tells the printer where to begin a new page. You can specify page breaks yourself or let Works determine them automatically for you. Works determines where automatic page breaks occur according to the margins and page size you set using the Layout command.

Use the Insert Page Break command to create your own page breaks. Insert Page Break can create horizontal or vertical page breaks. You must select an entire row or column before you insert a page break.


File Edit Print Select Format Options Chart Window
A B C D E F G
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A
B
A1
SS21.WKS
Edit formula.

A To set this page break, select this row.
B To set this page break, select this column.



Works divides large spreadsheets into pages and prints them in the order shown.

A horizontal page break tells Works what the first printed row on a page will be. Any rows below the page break print on the following page. A vertical page break tells Works what the first printed column on a page will be. Any columns to the right of the page break print on the following page.

Large spreadsheets usually require several pages. You can lay out the pages as shown in the preceding diagram to see the entire spreadsheet.

To insert a page break

1. Select the column or row where you want the page break.
2. From the Print menu, choose Insert Page Break.

   The page break mark (») appears next to the selected row or on top of the selected column.

To delete a page break

1. Select the column or row containing the page break mark.
2. From the Print menu, choose Delete Page Break.

   The page break mark is removed.

Percent Command (Format Menu)

The Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, .43 becomes 43.00%). Negative percentages are preceded by a minus sign (−). Use percent format whenever you want to display a decimal fraction as a percentage.

For information on	See
Using Percent and other formats	Formatting Numbers

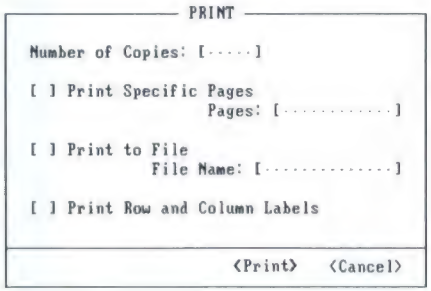
Print Chart Command (Print Menu)

The Print Chart command lets you print the active chart from the Spreadsheet. If you want to define a chart, use the commands on the Chart screen. You can print the current chart or copy it to a disk file.

For information on	See
Printing charts	Print Command, in Chapter 9

Print Command (Print Menu)

The Print command prints the current print area or copies it to a disk file.



Print Row and Column Labels Prints the column letters (A through IV) across the top of each page and the row numbers (1 through 4096) down the left side of each page. Turn this option off to keep the row and column labels from printing.

The other options in the Print dialog box are described in "Printing a File," in Chapter 2, "Using Basic Skills."

Setting the Print Area

The print area is the range that Works prints. It can be as large as the entire spreadsheet or as small as a cell. You set the print area by selecting the cells you want to print and choosing the Set Print Area command. Most of the time you do not need to set the print area. If you don't set the print area, Works prints all of your spreadsheet.

To set the print area

1. Select the range you want to print.
2. From the Print menu, choose Set Print Area.

If you want to print your entire spreadsheet after you have printed a portion of it, you need to select your entire spreadsheet, then reset the print area with Set Print Area.

Printing the Spreadsheet

The Print command prints the current print area or copies it to a disk file.

To print the spreadsheet

1. From the Print menu, choose Print.
2. Turn on the Print Row and Column Labels check box to print the column letters (A through IV) and row numbers (1 through 4096).
3. Press ENTER.

For information on	See
Laying out pages	Printing a File, in Chapter 2
Setting page breaks	Page Breaks and Pagination

Protect Command (Options Menu)

The Protect command turns the spreadsheet's protection on and off. A mark beside the command name in the menu means protection is on. While protection is on, you cannot format cells, change the contents of locked cells, or unlock locked cells. Also, many commands become grayed. When protection is off, you can change the contents and format of any cell.

You can prevent someone from changing the contents of a cell by locking the cell. Protecting spreadsheet cells is a two-step process:

1. Lock or unlock the appropriate cells.
2. Turn the protection on.

All cells in a spreadsheet are initially locked. When protection is off, you should unlock all cells that you want to be able to change.

To unlock cells

1. Select the cells you want to unlock.

   These will be the cells whose contents you want to be able to change while protection is on.
2. From the Format menu, choose Style.
3. Turn off the Locked check box.
4. Press ENTER.

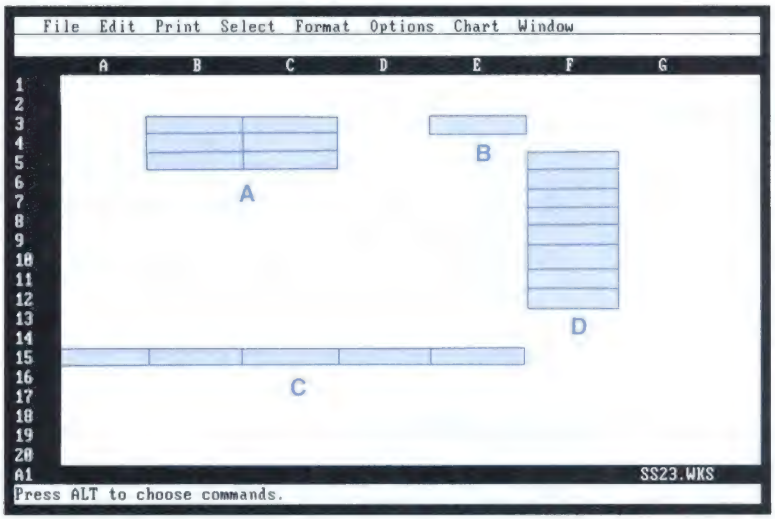
To turn protection on and off

After you have unlocked the appropriate cells, turn on protection to prevent the locked cells from being changed. The contents of locked cells are not protected until you turn on protection.

- From the Options menu, choose Protect.

A mark beside the command means protection is turned on. When protection is on, you can use TAB and SHIFT+TAB to move the highlight between unlocked cells. The highlight moves left to right, top to bottom, skipping over all locked cells.

Ranges


File Edit Print Select Format Options Chart Window
A B C D E F G
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A
B
C
D
A1
SS23.WKS
Press ALT to choose commands.

A B3:C5
B E3
C A15:E15
D F5:F12

A range is a rectangular group of cells. A range can be one cell, an entire column or row, a small block of cells, or an entire spreadsheet.

Ranges make working with a spreadsheet faster and easier. For instance, you can:

- Copy formulas to all cells in a range at once.
- Move, format, or erase all cells in a range at once.
- Give a range a name.
- Use ranges in formulas.
- Go to a specific range.
- Print a range.

You refer to a range using a range reference. A range reference is made of the cell references of the upper-left and lower-right corners of the range, separated by a colon. For example, B3:C5 is the range reference that describes the range whose upper-left corner is cell B3 and lower-right corner is cell C5.

Selecting Ranges

Before you can use a command on a range of cells, you need to select the range. For example, if you want to clear the cells in a range, you need to select the range first so that Works knows which cells to clear.

To select a range

1. Select the cell in the upper-left corner of the range you want to select.
2. Press F8 and use the movement keys to extend the selection to the other cells in the range.

   You can also press SHIFT+ a DIRECTION key to extend the selection to a range.

For more information on how to select ranges, see "Selecting."

Naming Ranges

If you intend to use a range in several formulas, you should give it a name. Range names are easier to use and remember than range references. Descriptive names like "1st Qtr Sales" are easier to remember than cryptic names like "FSTQS." You can name ranges anything you like, but the name shouldn't resemble a cell or range reference.

To name a range

1. Select the cells you want in the range.
2. From the Edit menu, choose Name.
3. In the Name list box, type the range name.
4. Choose the Create button.

Using Range Names

Once you have named a range, you can use the range name in formulas in place of cell and range references. For example, the formula =SUM(First Qtr Sales) adds all of the cells in the range named "First Qtr Sales." Range names make formulas easier to understand.

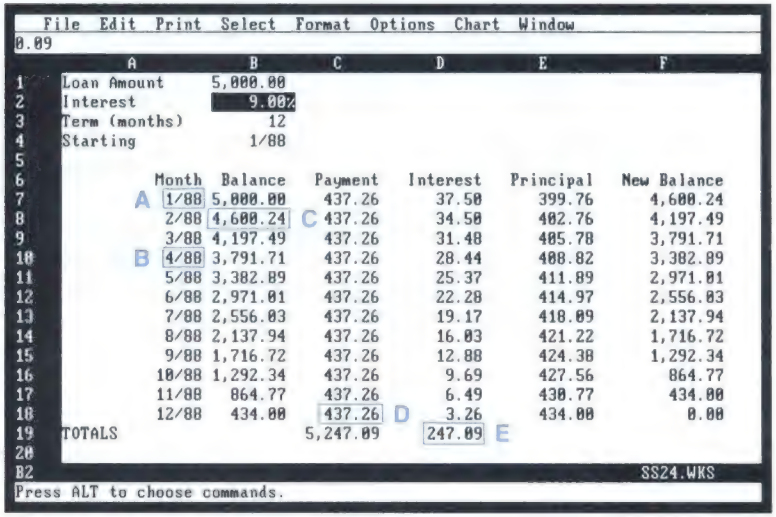
If a range name resembles a number (123), cell (A1), or function (NOW()), surround the range name in single quotation marks when you use it in a formula. For example, to use A1 as a name in a formula, type *'A1'*.

You can also use range names in Spreadsheet and Charting commands. For example, you can use the Go To command to select a specific range in the spreadsheet.

For information on	See
Copying ranges	Copying
Erasing ranges	Erasing
Formatting cells in a range	Style Command
Moving ranges	Move Command
Selecting a specific range	Go To Command
Using ranges in formulas	Formulas

References

References identify the location of cells and ranges on the spreadsheet. They make formulas flexible. You can use the same value in many formulas by entering the value in a cell and referring to that cell in the formulas. Then, if you change the value of the cell, Works recalculates the formulas using the new value.



A =B4
B =A9+31
C =F7
D =PMT($B$1,$B$2/12,$B$3)
E =SUM(D7:D18)

A cell reference identifies a single cell. It uses the column letter and row number to describe the cell. In the example above, F7 is a cell in column F, row 7. If you entered the formula =F7 into a cell, Works would retrieve the value from F7 and display it in the cell.

A range reference identifies a block of cells. It uses the cell reference of the upper-left and lower-right corner cells, separated by a colon, to describe the range. In the example above, D7:D18 describes the block of 12 cells whose upper-left corner cell is D7, and whose lower-right corner cell is D18. If you entered the formula =SUM(D7:D18) into a cell, Works would add all values in the range and display the total in the cell.

Like a range reference, a range name also identifies a block of cells, but uses a name to describe it rather than a reference. Range names make formulas easier to read. Range names and range references can be used interchangeably within formulas and commands. For example, if the range A1:B5 were named Sales, then =SUM(Sales) and =SUM(A1:B5) would give the same result.

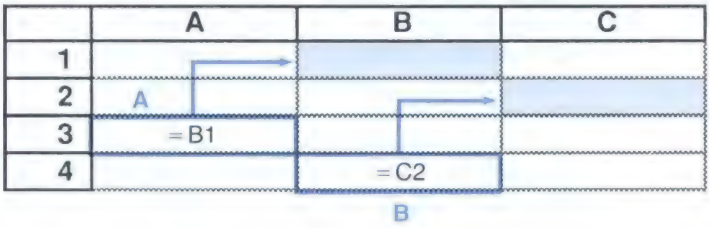
Relative and Absolute References

When you build a formula, you can refer to cells using relative or absolute references. You can combine these two types to create a third type called a mixed reference.

Relative References

Most references in a spreadsheet are relative references. A relative reference tells Works how to get to a cell. It's like saying, "Go up two blocks and over one." For example, let's say you enter the formula =B1 in cell A3. The cell reference in the formula points to a cell that is two rows up and one column to the right.

If you were to copy the formula =B1 from cell A3 to cell B4, Works would still look for a value in the cell that is two rows up and one column to the right: cell C2. Works would enter =C2 as the formula in cell B4. This feature saves you time whenever you need to have several formulas that all use the same relationships. You can enter the formula once, then copy it to all the other cells that need the same formula.

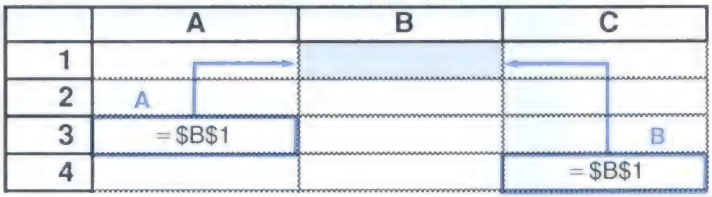


A The original formula tells Works to go up two rows and right one column to get a value.

B When you copy the formula, Works uses the same relationship and goes up two rows and right one column to get a value.

Absolute References

An absolute reference is like a mailing address: 1738 Maple Drive. It describes one location on the spreadsheet. No matter where you copy a reference to, it still points to the same cell. For example, an absolute reference to cell B1 always points to cell B1, even if the formula containing the reference is copied to another location on the spreadsheet. You insert dollar signs into a reference you want to be absolute. For example, $B$1 is an absolute reference to cell B1.



A The absolute reference in the original formula tells Works to get only the value in cell B1.

B When you copy the formula, Works uses the same absolute reference to get only the value in cell B1.

Mixed References

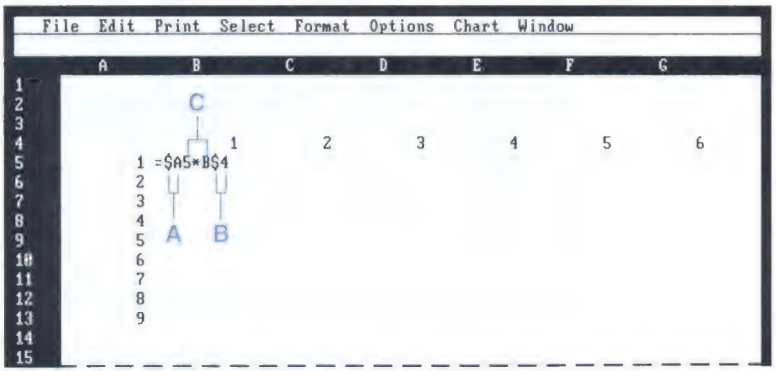
If you want to refer to cells so that only the column or row reference is absolute or relative, you can use mixed references. For example, in the reference $A2, only the column reference is absolute.

You can either type the mixed reference, or you can use the F4 key to insert the dollar signs for you. F4 cycles through the different combinations of mixed references, starting with the current reference, in the following order:

Relative column/Relative row	A2
Absolute column/Absolute row	$A$2
Relative column/Absolute row	A$2
Absolute column/Relative row	$A2

As you copy a mixed reference, the column remains fixed (absolute) and the row is allowed to vary (relative), or vice versa.

Range references can also be mixed. For example, $A$1:B2 describes a range whose upper-left corner ($A$1) is absolute, and whose lower-right corner is relative.



A The column ($A) is absolute, so the reference always gets data from column A.

B The row ($4) is absolute, so the reference always gets data from row 4.

C The row (5) and column (B) are relative and will change when copied to other cells.

Mixed references are useful for building spreadsheets that resemble a multiplication table; the number at the top of a column is multiplied by the number at the left end of a row to arrive at the product. For example, the formula in B5 above is =$A5*B$4. Since each formula must always refer to the top row, the row number is absolute (the $4 in B$4). Likewise, since each formula must always refer to the left column, the column letter is also absolute (the $A in $A5).

Using Range Names as References

You can use range names as references in formulas. For example, if cell B2 is named "Sales," you could type easy-to-read formulas such as:

=Sales*33%

If you select a named cell or range while typing a formula, Works inserts the name in place of the reference.

Pressing F4 once converts a range name to an absolute reference, such as =$Total Sales.

For information on	See
Using ranges	Ranges
Writing formulas	Formulas

Row Command (Select Menu)

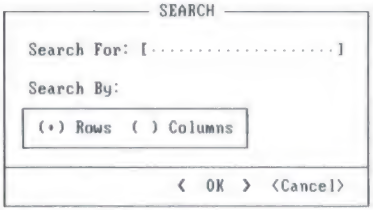
Shortcut key: CONTROL+F8

The Row command extends the selection to include entire rows. It is most often used before inserting or deleting rows, or inserting page breaks.

For information on	See
Inserting page breaks	Page Breaks and Pagination
Selecting columns or rows	Selecting

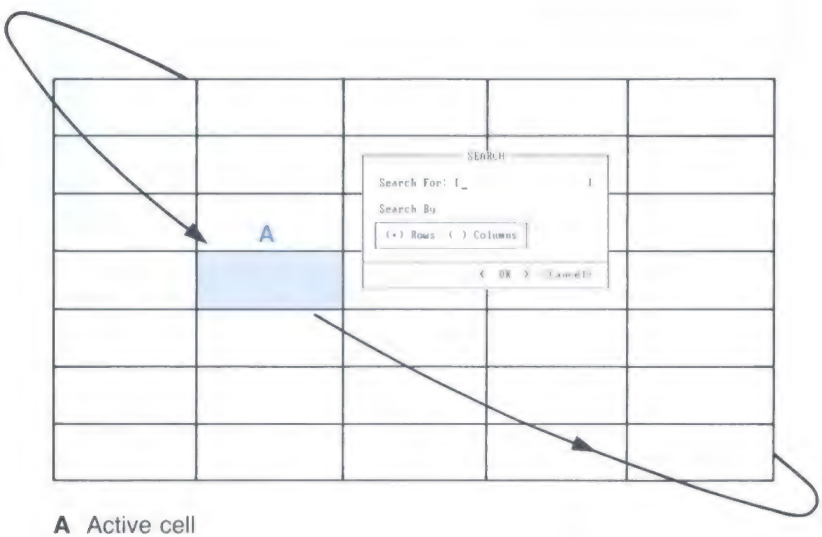
Search Command (Select Menu)

The Search command searches cells for a series of characters, called the search item, that you specify. You can use Search to find every occurrence of a search item. If you have a range of cells selected, Works searches all cells within the range. If you have a single cell selected, Works searches the entire spreadsheet.



Search For Specifies the search item.

Search By Specifies a search by either rows or columns. Works searches either row by row or column by column, moving the highlight to each cell containing the search item. It starts at the active cell, and when it gets to the lower-right corner of the spreadsheet or selection, it wraps around to the upper-left corner and continues searching until it returns to the active cell.



A Active cell

To search a range

You can restrict your search to a range instead of searching the entire spreadsheet. This is helpful when you know the general location of the information you want to find, but don't want to search through the entire spreadsheet. Whenever a range is selected, Works searches inside the range. Otherwise, Works searches the entire spreadsheet.

Works searches through whatever is displayed in the cells. You can search either the displayed values or the formulas. To search for a formula, you must first choose the Show Formulas command from the Options menu to display all formulas. Searching formulas is especially useful for finding range names.

1. Select the range you want to search.

   If you want to search the entire spreadsheet, do not select a range.
2. From the Select menu, choose Search.
3. In the Search For text box, type the search item you want to find.
4. Under Search By, select Rows or Columns.
5. Press ENTER.
6. Press F7 to repeat the search.

   Works searches for the next occurrence of the search item.

To repeat the previous search

- Press F7.

Searching with Wildcards

"Wildcards" help you find cells whose contents are similar, but not quite the same. You substitute wildcards for characters within the search item. Works uses the question mark (?) and the asterisk (*) as wildcard characters.

The question mark (?) stands for any single character in the same position as the question mark. For example, if you want to find a particular name in your spreadsheet, but are unsure whether the name was Smithson or Smithsen, you could type *Smiths?n* in the Search For text box. Works finds either name.

The asterisk (*) stands for any number of characters in that same position. For example, if you type *s*p* in the Search For text box, Works finds all words that begin with an "s" and end with a "p" such as sip, strap, and stump.

For information on	See
Selecting a range	Selecting

Select Text Printer Command (Print Menu)

The Select Text Printer command tells Works what printers are attached to your computer.

For information on	See
Setting up and selecting printers	Chapter 2, "Using Basic Skills"

Selecting

Selecting tells Works which cells you want to work with. You can work with a group of cells rather than one cell at a time. For example, you can clear all of the cells in a column in one step if you select the column first. This is much faster than clearing each cell individually.

A single cell, called the active cell, is selected at all times. The active cell is indicated by a highlight. The formula bar always shows the contents of the active cell, and the status line always shows its cell reference.

You can extend the selection from one cell to a range. How you extend the selection depends on what range you want to select. The procedures below tell you how to select a cell or range.

To select a cell

- Press the DIRECTION keys to move the highlight to the cell you want to select.

To select a range

1. Select the cell in the upper-left corner of the range you want to select.
2. Press F8 and use the DIRECTION keys to extend the selection to the other cells in the range.

   You can also hold down the SHIFT key and press the DIRECTION keys to extend the selection to a range.

You can also use the Go To command to select a range. For information, see "Go To Command."

To select a column or row

1. Select a cell in the column or row you want to select.
2. From the Select menu, choose Column to select the column. Choose Row to select the row.

   You can also press SHIFT + F8 to select the column, or CONTROL + F8 to select the row.

To select several columns or rows

1. Select a cell in each column or row you want to select.
2. From the Select menu, choose Column to select the columns. Choose Row to select the rows.

   You can also press SHIFT + F8 to select the columns, or CONTROL + F8 to select the rows.

To select the entire spreadsheet

1. From the Select menu, choose Column.
2. From the Select menu, choose Row.

You can also press CONTROL + SHIFT + F8 to select the entire spreadsheet.

Set Print Area Command (Print Menu)

The Set Print Area command lets you print a portion of your spreadsheet instead of the entire spreadsheet.

The print area is the range that Works prints. It can be as large as the entire spreadsheet or as small as a cell. If you don't set the print area, Works prints the entire spreadsheet.

To set the print area

1. Select the range you want to print.
2. From the Print menu, choose Set Print Area.

If you want to print the entire spreadsheet after you have printed a portion of it, you need to select the entire spreadsheet, then reset the print area using Set Print Area.

For information on	See
Printing spreadsheets	Print Command
Selecting cells	Selecting

Show Formulas Command (Options Menu)

The Show Formulas command displays the formulas rather than the values in your spreadsheet. Choosing the command again returns the spreadsheet to its original condition.

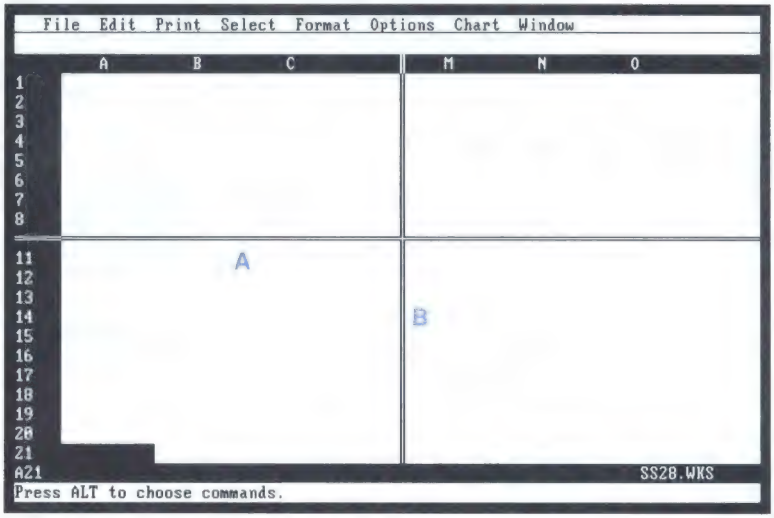
Seeing the formulas makes it easier to understand how the spreadsheet is constructed. Errors are easier to find if you can see the formulas and follow references throughout the spreadsheet. When the formulas are displayed, you can use the Search command to find range names and references.

To show or hide all formulas in the spreadsheet

- From the Options menu, choose Show Formulas.

For information on	See
Searching formulas	Search Command

Split Command (Options Menu)


File Edit Print Select Format Options Chart Window
A B C M N O
1 2 3 4 5 6 7 8
11 12 13 14 15 16 17 18 19 20 21
A
B
A21
SS20.WKS
Press ALT to choose commands.

A Horizontal split
B Vertical split

The Split command creates horizontal and vertical lines that divide the work area into two or four smaller areas called windows. Each pane can show a different part of the spreadsheet, letting you look at two or four different places at once. For example, you can use a horizontal split to show column headings on your spreadsheet in the upper window, and totals at the bottom of each column in the lower window.

You can divide the work area into side-by-side windows, upper and lower windows, or all four. Adjacent windows scroll together along the direction of the split. For example, as you scroll down the spreadsheet, the rows in side-by-side windows scroll upward together. Likewise, as you scroll to the right, upper and lower windows scroll to the right together.

To create windows

1. From the Options menu, choose Split.
   SPLIT appears in the status line.
2. Press the DOWN or RIGHT key to move the split to where you want it.
3. Press ENTER.

To move a split

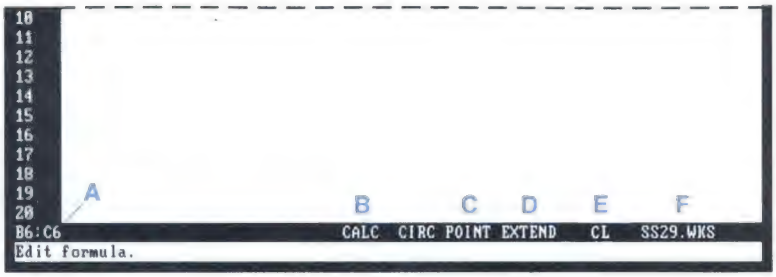
1. From the Options menu, choose Split.
2. Press the UP or DOWN keys to move the horizontal split. Press the LEFT or RIGHT keys to move the vertical split.
3. Press ENTER.

To remove splits from the screen

1. From the Options menu, choose Split.
2. Press the HOME or END keys to move the splits out of the work area.
3. Press ENTER.

Once your screen is split into windows, you move the active cell between windows by pressing F6, which moves the highlight clockwise, or SHIFT + F6, which moves it counterclockwise.

Status Line



A Current selection
B Appears when spreadsheet needs to be calculated.
C Appears when you are in point mode.
D Appears when you are extending a selection.
E Either CL (Caps Lock) or NL (Num Lock) appears here depending on whether Caps Lock or Num Lock is on.
F Filename

The status line displays information about what you are seeing and doing as you use the spreadsheet.

A1:B10 Displays the reference for the current selection.

CALC Appears when the spreadsheet needs to be calculated.

CIRC Appears when circular references exist.

POINT Appears when you are in point mode.

EDIT Appears when you are in edit mode.

EXTEND Appears when you have pressed F8 to extend a selection.

NL CL Appears when the NUMLOCK or CAPSLOCK keys are active.

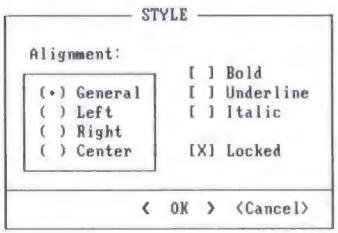
FILENAME.EXT Displays the name of the active file.

For information on	See
Selections	Selecting
CALC	Calculating
CIRC	Circular References
POINT	Formulas
EXTEND	Selecting

Style Command (Format Menu)

The Style command aligns, formats, and locks or unlocks selected cells.

Works lets you align (justify) a value within a cell. You can change the value's printed appearance by making it bold, underlined, or italic. You can also lock or unlock a cell to prevent or allow its contents to be changed.



Alignment Changes the displayed position of the contents of a cell. The default is General alignment where text is left-aligned and numbers and ERRs are right-aligned. Left, right, and center alignment shift text, numbers, and ERRs within a cell.

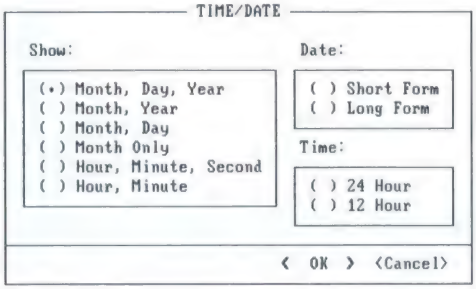
Bold, Underline, Italic Formats the selected cells using the specified style. Formatted cells appear on the screen in high intensity.

Locked Prevents the contents or format of a cell from being changed when protection is on. Unlock the cell to allow the contents and format to be changed when protection is on.

For information on	See
Aligning values in a cell	Aligning Values
Locking and protecting cells	Protect Command

Time/Date Command (Format Menu)

The Time/Date command converts numeric values to a date or time.



Show Defines how much of the date or time you want to display.

Date If you are formatting a date, the long form displays months as text (e.g., Oct), while the short form displays the months as numbers.

Time If you are formatting a time, 12-hour form uses AM and PM indicators, while 24-hour form uses a 24-hour system.

For information on	See
Directly entering times and dates	Dates and Times

Unfreeze Titles Command (Options Menu)

The Unfreeze Titles command reverses the Freeze Titles command. Once they are unfrozen, you can scroll previously frozen rows and columns off the screen.

For information on	See
Freezing and unfreezing titles	Freeze Titles Command

View Command (Chart Menu)

You can create a chart from your spreadsheet data.

For information on	See
Charting basics	Chapter 8, "Introduction to Charting"
Charting commands	Chapter 9, "Charting Reference"

Width Command (Format Menu)

The Width command changes the width of all selected columns.

You need not select the entire column before you change its width. If any cell in a column is selected, the new column width applies to all cells in that column.

To adjust all 256 columns, select an entire row before setting the column width. The Width command affects all columns in the selection. Column widths can vary from zero (a hidden column) to 79 characters.

If a column is too narrow to display a formatted value, Works displays ######. Widen the column to remove the ###### and display the actual value.

To change column width

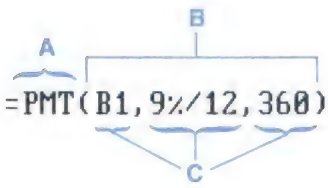
1. Select a cell in each column you want to change.
2. From the Format menu, choose the Width command.
3. In the dialog box, type the column width.
4. Press ENTER.

For information on	See
Formatting columns	Formatting Numbers
Hidden columns	Hiding

A function is a built-in calculation that is similar to an arithmetic operator, such as + or −, in that it produces a new value from other values. Microsoft Works has 57 functions that can do a wide range of calculations. This chapter describes the Works functions and how to use them in your spreadsheet and database formulas.

Function Syntax

Most functions consist of the function name, a set of parentheses, and arguments (the values the function uses to produce a new value) separated by commas. Most functions have one or more arguments, although some functions, such as FALSE(), have no arguments.



A Function name
B Parentheses
C Arguments separated by commas

An argument must be a number or an expression that results in a number. This means that an argument can be a number, a cell or range reference, another function, or any combination such as B1/12. Some functions, such as COLS, can only use a reference as an argument.

ABS(x)

ABS gives the absolute (positive) value of *x*.

- =ABS(−2) *equals* 2
- =ABS(2) *equals* 2

ACOS(x)

ACOS gives the arccosine of *x*. The arccosine is the angle whose cosine is *x*. ACOS gives the size of the angle in radians. *X* must be in the range from −1 through 1. The angle will range from 0 radians (0 degrees) through π radians (180 degrees).

- =ACOS(−0.5) *equals* 2.094 (2π/3 radians)
- =ACOS(−0.5)*180/PI() *equals* 120 (degrees)

ASIN(x)

ASIN gives the arcsine of *x*. The arcsine is the angle whose sine is *x*. ASIN gives the size of the angle in radians. *X* must be in the range from −1 through 1. The angle will range from −π/2 radians (−90 degrees) through π/2 radians (90 degrees).

- =ASIN(−0.5) *equals* −0.524 (−π/6 radians)
- =ASIN(−0.5)*180/PI() *equals* −30 (degrees)

ATAN(x)

ATAN gives the arctangent of *x*. The arctangent is the angle whose tangent is *x*. ATAN gives the size of the angle in radians. The angle will range from −π/2 radians (−90 degrees) through π/2 (90 degrees).

- =ATAN(1) *equals* 0.785 (π/4 radians)
- =ATAN(1)*180/PI() *equals* 45 (degrees)

ATAN2(x-coordinate,y-coordinate)

ATAN2 gives the arctangent of an angle defined by *x*- and *y-coordinates*. The arctangent is the angle, in radians, determined by the point described by the *coordinates*. The angle will range from −π radians (180 degrees) to, but not including, π radians (180 degrees).

If x-coordinate is	and y-coordinate is	then ATAN2 gives an angle
positive	positive	between 0 and $\pi/2$
negative	positive	between $\pi/2$ and π
negative	negative	between $-\pi$ and $-\pi/2$
positive	negative	between $-\pi/2$ and 0

If both the *x-coordinate* and *y-coordinate* equal 0, ATAN2 gives the error value ERR.

- =ATAN2(1,1) *equals* 0.785 ($\pi/4$ radians)
- =ATAN2(−1,−1) *equals* −2.356 ($-3\pi/4$ radians)
- =ATAN2(−1,−1)*180/PI() *equals* −135 (degrees)

AVG(RangeReference0,RangeReference1,...)

AVG gives the average of values in the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In cell references, blank cells are treated as zero. In range references, blank cells are ignored. In all references, text is treated as zero.

	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

- =AVG(B2:F2) *equals* 88
- =AVG(B2:F2,G2) *equals* 90

CHOOSE(Choice,Option0,Option1,...)

CHOOSE uses *Choice* to select an *Option* from the list. For example, if the *Choice* is 0, CHOOSE selects *Option0;* if the *Choice* is 1, CHOOSE selects *Option1,* and so on.

If the *Choice* is less than 0 or greater than the number of options in the list, CHOOSE gives the error value ERR.

- If cell A1 contains the number 2, then:
  =CHOOSE(A1−1,10,20,30) *equals* 20

COLS(RangeReference)

COLS gives the number of columns in the *RangeReference*.

If the range B2:D5 is named Table, then:

- =COLS(Table) *equals* 3
- =COLS(B2:D5) *equals* 3

For information on	See
Counting rows in a range	ROWS

COS(x)

COS gives the cosine of *x*. *X* is an angle measured in radians.

- =COS(1.047) *equals* 0.5
- =COS(60*PI()/180) *equals* 0.5 (cosine of 60 degrees)

COUNT(RangeReference0,RangeReference1,...)

COUNT gives the number of non-blank cells contained in the *RangeReferences*. COUNT adds 1 for every cell that contains a number, formula, text, ERR, and NA.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells add 1 to the count.

	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

- =COUNT(B2:F2) *equals* 4
- =COUNT(B2:F2,E2) *equals* 5

CTERM(Rate,FutureValue,PresentValue)

CTERM gives the number of compounding periods needed for an investment, earning a fixed *Rate* per compounding period, to grow from a *PresentValue* to a *FutureValue*.

Rate represents the interest rate for a single compounding period. For example, if your investment earns 12% annually and interest is compounded monthly, divide the annual interest rate by 12 to find the monthly *Rate*, or 1% per month.

- You put $1,000 into a savings account with a yearly interest rate of 8 3/4%. Interest is compounded monthly. How long does it take to double your investment?

  =CTERM(8.75%/12,2000,1000) *equals* 95.41 months (about 8 years)

DATE(Year,Month,Day)

DATE gives a date number for the date specified by *Year*, *Month*, and *Day*. The date number is an integer ranging from 1 through 65534, representing the dates from January 1, 1900 through June 3, 2079.

Year must be a number ranging from 0 (1900) to 179 (2079). *Month* is generally a number ranging from 1 through 12, while *Day* is generally a number ranging from 1 through 31. If the month or day numbers are outside these ranges, DATE adjusts to the correct date. If *Year*, *Month*, and *Day* do not make up a valid date within Works' range of dates, DATE gives the error value ERR.

You can use DATE to enter a constant date in a cell using a formula (e.g., =DATE(60,10,30)). But it is easier and faster to type the date directly as 10/30/60 or Oct 30, 1960.

You can also use DATE within a larger formula. For example, to calculate the number of days between March 29, 1987 and October 30, 1960 you can use the formula =DATE(87,3,29)−DATE(60,10,30). But again, it is easier and faster to enter the formula as ='3/29/87'−'10/30/60'.

If A3 contains the number of the current quarter (1,2,3, or 4) of 1987, then:

- =DATE(87,A3*3+1,1) *equals* the date number of the first day of the next quarter

- =DATE(87,A3*3+1,1)−DATE(87,A3*3−2,1) *equals* the number of days in this quarter
- =MOD(DATE(87,7,1),7) *equals* 4 (day of the week for Wednesday, July 1, 1987)

For information on	See
Showing only the day, month, or year	DAY MONTH YEAR

DAY(DateNumber)
MONTH(DateNumber)
YEAR(DateNumber)

DAY, MONTH, and YEAR give the number for the day, month, or year of the date specified by the *DateNumber*. DAY gives an integer ranging from 1 through 31, MONTH gives an integer ranging from 1 through 12, and YEAR gives an integer ranging from 0 through 179.

DateNumbers use the integers 1 through 65534 to represent the dates January 1, 1900 through June 3, 2079. January 1, 1900 is date number 1, January 2, 1900 is date number 2, and so on through June 3, 2079 which is date number 65534.

- =DAY('4/15/87') *equals* DAY(31882) *equals* 15
- =MONTH('4/15/87') *equals* MONTH(31882) *equals* 4
- =YEAR('4/15/87') *equals* YEAR(31882) *equals* 87

DDB(Cost,Salvage,Life,Period)

DDB uses the double declining balance method to find the amount of depreciation in a specific *Period*.

Cost is the amount you paid for the asset. *Salvage* is the amount you expect to obtain when you sell the asset at the end of its life. *Life* is the number of time periods (usually years) you expect the asset to be in use. *Period* is the period of time for which you want to find the depreciation amount.

DDB uses the following to compute depreciation for a given period:

$$\frac{(\text{Value}*2)}{\text{Life}}$$

- You buy a tractor for $50,000. You expect the tractor to last 10 years, after which you could probably sell it for $8,000. The depreciation expense for the seventh year, using the double-declining balance method, is calculated by:

  =DDB(50000,8000,10,7) *equals* $2,621.44

For information on	See
Straight line depreciation	SLN
Sum-of-the-years-digits depreciation	SYD

ERR()

ERR gives the error value ERR. Use it to force a cell to display ERR whenever a specified condition exists. You can use ERR to find other cells whose formulas are dependent on the "erroneous" cell.

If A1 contains the number 0, then:

- =(IF(A1=0,ERR(),A1)) *equals* ERR

EXP(x)

EXP gives *e* to the power of *x*, where *e* is 2.71828..., the base number of natural logarithms. To compute powers of other bases, use the exponentiation operator (^). EXP is the inverse of LN.

- =EXP(1) *equals* 2.718... (the value of *e*)
- =EXP(LN(3)) *equals* 3

For information on	See
The inverse of EXP	LN

FALSE()

FALSE gives the logical value 0 (FALSE). You can use the FALSE() instead of 0 to create more readable logical formulas.

If A1 contains the number 5, then:

- =IF(A1>10, TRUE(),FALSE()) *equals* =IF(A1>10,1,0) *equals* 0

For information on	See
Displaying TRUE	TRUE
Logical formatting	Logical Command, in Chapter 11

FV(Payment,Rate,Term)

FV gives the future value of an ordinary annuity of equal *Payments*, earning a fixed interest *Rate* per Term, compounded over several Terms (*Term*).

Works assumes that the first *Payment* occurs at the end of the first period. Works uses the following formula to calculate the future value of an ordinary annuity:

$$\frac{\text{Payment}*(1+\text{Rate})^{\text{Term}-1}}{\text{Rate}}$$

- You plan on depositing $1,500 into your savings account each year for the next eight years. The account earns 8.75% interest compounded annually. How much money will be in the account at the end of eight years?

  =FV(1500,8.75%,8) *equals* $16,393.61

- If the first payment occurs at the beginning of the first period (an annuity due), then the value of your account at the end of 8 years is calculated by:

  =FV(1500,8.75%,8)*(1+8.75%) *equals* $17,828.05

HLOOKUP(LookupValue,RangeReference,RowNumber)
VLOOKUP(LookupValue,RangeReference,ColumnNumber)

HLOOKUP and VLOOKUP find an entry in a table.

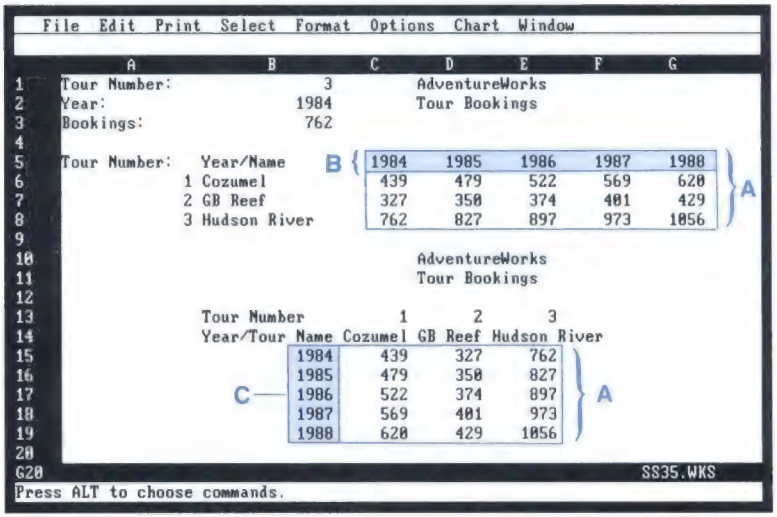
HLOOKUP searches the top row of a *RangeReference* until it finds the number that matches the *LookupValue*. Then it goes down the column by the number of rows indicated by *RowNumber* to find the entry.

You should arrange the numbers in the top row in ascending order. Works searches the top row for the largest number that is less than or equal to the *LookupValue*.

VLOOKUP works in a similar way to HLOOKUP. It searches the leftmost column of a *RangeReference* until it finds the number that matches the *LookupValue*. Then it goes to the right by the number of columns indicated by *ColumnNumber* to get the entry.

You should arrange the numbers in the left column in ascending order. Works searches the left column for the largest number that is less than or equal to the *LookupValue*.

If *ColumnNumber* or *RowNumber* is negative, or is greater than or equal to the number of rows or columns in a table's *RangeReference*, Works gives the error value ERR.


File Edit Print Select Format Options Chart Window
A B C D E F G
1 Tour Number: 3 AdventureWorks
2 Year: 1984 Tour Bookings
3 Bookings: 762
4
5 Tour Number: Year/Name B 1984 1985 1986 1987 1988 A
6 1 Cozumel 439 479 522 569 620
7 2 GB Reef 327 350 374 401 429
8 3 Hudson River 762 827 897 973 1056
9
10 AdventureWorks
11 Tour Bookings
12
13 Tour Number 1 2 3
14 Year/Tour Name Cozumel GB Reef Hudson River
15 1984 439 327 762
16 1985 479 350 827
17 C 1986 522 374 897 A
18 1987 569 401 973
19 1988 620 429 1056
20
G20 SS35.WKS
Press ALT to choose commands.

A RangeReference is a range that contains both the LookupValues and the data.

B HLOOKUP searches for the LookupValue in the top row of RangeReference, then goes down by the NumberOfRows.

C VLOOKUP searches for the LookupValue in the left column of RangeReference then goes to the right by the NumberOfColumns.

- =HLOOKUP(1986,C5:G8,2) *equals* 374 (cell E7)
- =HLOOKUP(1986.5,C5:G8,0) *equals* 1986 (cell E5)
- =VLOOKUP(1986,B15:E19,2)*equals* 374 (cell D17)
- =VLOOKUP(B2,B15:E19,B1) *equals* 762 (cell E15)
- =VLOOKUP(1986,C5:G8,200) *equals* ERR

For information on	See
Finding values in tables when given the column and row	INDEX

HOUR(TimeNumber)
MINUTE(TimeNumber)
SECOND(TimeNumber)

HOUR, MINUTE, and SECOND give the number for the hour, minute, or second of the time represented by the *TimeNumber*. HOUR gives an integer ranging from 0 through 23. MINUTE and SECOND give integers ranging from 0 through 59. *TimeNumber* should range from 0 through 0.999.

TimeNumbers use the decimal fractions 0 through 0.999 to represent the times 12:00:00 A.M. through 11:59:59 P.M.

- =HOUR('16:48:30') *equals* HOUR(0.70035) *equals* 16
- =MINUTE('16:48:30') *equals* MINUTE(0.70035) *equals* 48
- =SECOND('16:48:30') *equals* SECOND(0.70035) *equals* 30

For information on	See
Using TIME	TIME

IF(Condition,ValueIfTrue,ValueIfFalse)

IF determines whether the *Condition* is true or false, then gives either the *ValueIfTrue* or the *ValueIfFalse*.

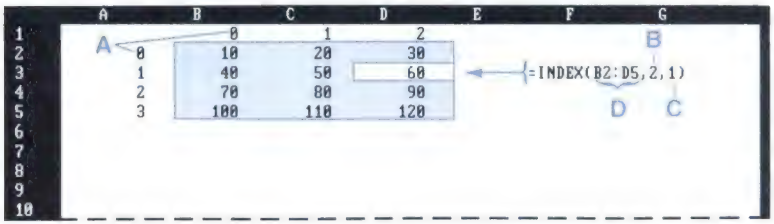
If A1 contains the number 20, then:

- =IF(A1>10,B1,C1) *equals* the value in B1
- =IF(A1=0,ERR(),A1/100) *equals* 0.2

INDEX(RangeReference,Column,Row)

INDEX gives the value in a cell in a *RangeReference* at the intersection of a *Column* and *Row*.

If *Column* or *Row* is negative, or is greater than or equal to the number of rows or columns in the *RangeReference*, Works gives the error value ERR.



A Column and row numbering begin with 0.
B Column number
C Row number
D Range reference

- =INDEX(B2:D5,2,1) *equals* 60 (cell D3)
- =INDEX(B2:D5,1,2) *equals* 80 (cell C4)
- =INDEX(B2:D5,0,0) *equals* 10 (cell B2)
- =INDEX(B2:D5,3,4) *equals* ERR
- =INDEX(B2:D5,−1,−1) *equals* ERR

For information on	See
Finding table entries based on column or row headings	HLOOKUP VLOOKUP

INT(x)

INT gives the integer part of x. INT deletes the digits to the right of the decimal point without rounding to the nearest integer. (Use ROUND to round x to the nearest integer.)

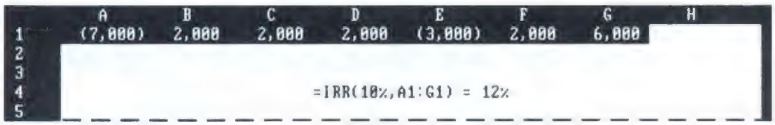
- =INT(8.9) *equals* 8
- =INT(−8.9) *equals* −8

IRR(Guess,RangeReference)

IRR gives the internal rate of return for the cash flow series in the *RangeReference*. The internal rate of return is the interest rate that gives the cash flow series a net present value of zero.

IRR uses an iterative technique that can have more than one solution. IRR gives an ERR error if the computations do not converge to within 0.0000001 after 20 iterations.

You enter a *Guess* to tell IRR where to begin. Enter a different *Guess* if Works cannot determine the IRR. Usually, a starting value between 0 and 1 yields a meaningful result.



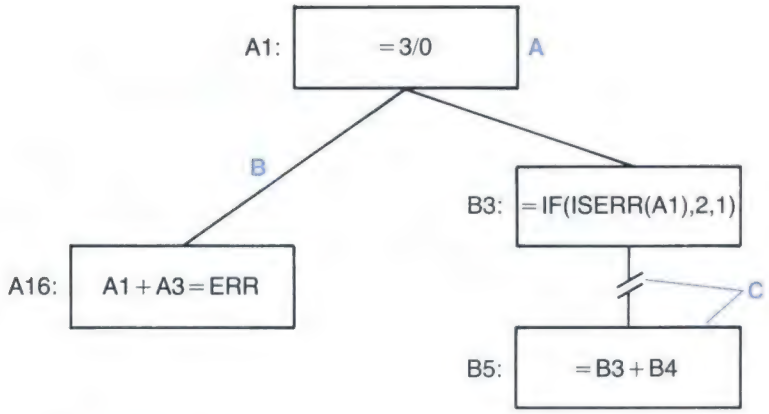
- You have an investment represented by cash flow numbers above that should yield around 10%. What is the actual internal rate of return?

  =IRR(10%,A1:G1) *equals* 12.32%

ISERR(x)

ISERR gives the logical value 1 (TRUE) if x is the error value ERR. Otherwise, it gives the logical value 0 (FALSE).

Use ISERR to test for errors in your spreadsheet. As the diagram shows, ISERR can be used to prevent errors from flowing to other related cells.



A Result is ERR.
B A16 shows ERR because there is no ISERR protection.
C ISERR prevents B5 from changing.

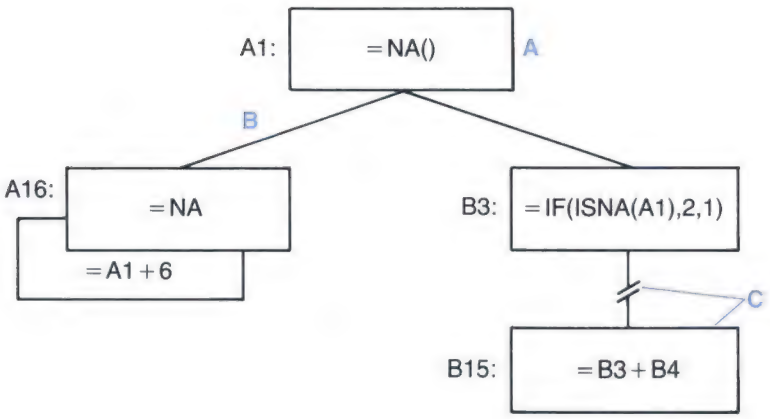
If A1 contains the error value ERR:

- =IF(ISERR(A1),2,1) *equals* 2
- =ISERR(3/0) *equals* 1

ISNA(x)

ISNA gives the logical value 1 (TRUE) if *x* is the value NA. Otherwise, it gives the logical value 0 (FALSE).

Use ISNA to test for NA values in your spreadsheet. As the diagram shows, ISNA can be used to prevent NA values from flowing to other cells.



A A1 displays NA.
B A16 displays NA whenever A1 contains =NA().
C ISNA in B3 prevents B15 from displaying NA.

If A1 contains the value NA, then:

- =IF(ISNA(A1),2,1)*equals* 2

For information on	See
Using NA	NA

LN(x)

LN gives the natural logarithm of *x*. Natural logarithms use the mathematical constant *e*, 2.71828..., as a base. *X* must be a positive number.

- =LN(2.7182818) *equals* LN(EXP(1)) *equals* 1
- =LN(EXP(3)) *equals* 3
- =LN(8)/LN(2) *equals* 3 (the base 2 logarithm of 8)

For information on	See
Base 10 logarithms	LOG

LOG(x)

LOG gives the base 10 logarithm of *x*. *X* must be a positive number. The inverse of LOG is exponentiation.

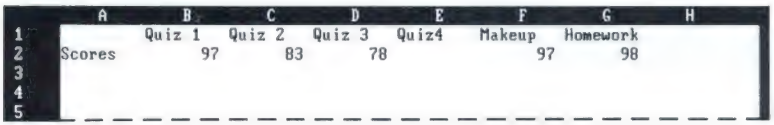
- =LOG(10) *equals* 1
- =LOG(100000) *equals* LOG(1E5) *equals* 5
- =LOG(8)/LOG(2) *equals* 3 (the base 2 logarithm of 8)

For information on	See
Natural logarithms (based on *e*)	LN

MAX(RangeReference0,RangeReference1,...)

MAX gives the largest number contained in the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells are treated as zero. In all references, text is treated as zero.



	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

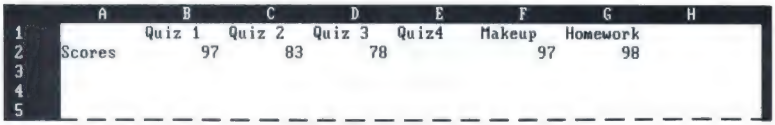
- =MAX(B2:F2) *equals* 97
- =MAX(B2:F2,G2,90) *equals* 98

For information on	See
Finding the smallest number in a set of references	MIN

MIN(RangeReference0,RangeReference1,...)

MIN gives the smallest number contained in the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells are treated as zero. In all references, text is treated as zero.



	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

- =MIN(B2:F2) *equals* 78
- =MIN(B2:F2,G2,70) *equals* 70

For information on	See
Finding the largest number in a set of references	MAX

MINUTE(TimeNumber)

MINUTE gives the number for the minute represented by the *TimeNumber*.

For information on	See
Using MINUTE	HOUR MINUTE SECOND

MOD(Numerator,Denominator)

MOD gives the remainder (modulus) of

$$\frac{\text{Numerator}}{\text{Denominator}}$$

The remainder has the same sign as the *Numerator*. MOD gives an ERR error if the denominator equals 0.

- =MOD(3,−2) *equals* 1
- =MOD(−3,−2) *equals* −1
- =MOD(7,4) *equals* 7−INT(7/4)*4 *equals* 3

MONTH(DateNumber)

MONTH gives the number for the month represented by the *DateNumber*.

For information on	See
Using MONTH	DAY MONTH YEAR

NA()

NA gives the numeric value NA. You can use NA() to indicate that information is "not available."

If A1 contains the number 0, then:

- =IF(A1=0,NA(),A1) *equals* NA

For information on	See
Using ISNA	ISNA

NOW()

NOW gives the date and time number for the current date and time. It is updated at every recalculation. The integer portion of NOW() is the date number, and the decimal fraction is the time number.

You can use the Format menu's Time/Date command to display the actual date or time.

If the current date and time is 4:48:00 P.M. on 4/15/87, then:

- =NOW() *equals* 31882.7
- =INT(NOW()) *equals* 31882 (current date number)
- =HOUR(NOW()) *equals* 16 (current hour of the day)

For information on	See
Time numbers and using times	HOUR MINUTE SECOND

NPV(Rate,RangeReference)

NPV gives the net present value of a series of cash flow payments, represented by numbers in a *RangeReference*, discounted at a fixed *Rate* per period.

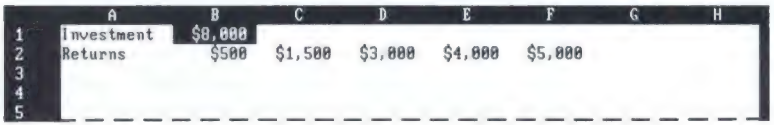
Rate represents the interest rate you want to use to discount each period. For example, if you have a 12% annual interest rate but want to discount on a monthly basis, divide the annual interest rate by 12 to find the monthly *Rate;* in this case, 1% per month.

RangeReference must be the reference of a single cell or of part of a single row or column. It may not be a range with more than one row and more than one column.

Works assumes that payments occur at the end of periods of equal length. To find the net present value of a cash flow series whose first payment occurs at the beginning of the periods, you must add the amount of the first payment to the net present value of the subsequent payments.

Works uses this formula to find the net present value:

$$NPV = \sum_{i=1}^{n} \frac{Payment\ [i]}{(1+Rate)\ i}$$



	A	B	C	D	E	F	G	H
1	Investment	$8,000						
2	Returns	$500	$1,500	$3,000	$4,000	$5,000		
3								
4								
5								

- You are interested in a rental contract that promises a 10% yield and monthly payments at the end of each month for the next five months. Cells B2:F2 contain the expected monthly payments. To calculate how much you should pay for the investment:

  =NPV(10%,B2:F2)−B1 *equals* $1,784.82

- Assume that the monthly payments are made at the beginning of the month:

  =500+NPV(10%,C2:F2)−B1 *equals* $2,763.30

For information on	See
Present value of equal cash flow payments	PV

PI()

PI() gives the number 3.14159..., an approximation of the mathematic constant π.

- =COS(60*PI()/180) *equals* 0.5 (cosine of 60 degrees)

PMT(Principal,Rate,Term)

PMT gives the periodic payment for a loan or an investment of *Principal* based on a fixed interest *Rate* per compounding period over a given *Term*. Works assumes that payments occur at the end of periods of equal length.

Rate represents the interest rate for a single compounding period. For example, for a 12% loan with monthly payments, divide the annual interest rate by 12 to find the monthly *Rate*, or 1% per month.

- You want to buy a car that requires a $12,000 loan at 9% interest per year. What would the payments be if you tried to pay off the loan with 24 monthly installments?

  =PMT(12000,9%/12,24) *equals* $548.22

PV(Payment,Rate,Term)

PV gives the present value of an ordinary annuity of equal *Payments*, earning a fixed interest *Rate* per period, over several periods (*Term*).

Works assumes that the first *Payment* occurs at the end of the first period. Works uses the following formula to calculate the present value of an ordinary annuity:

$$PV = \frac{Payment*(1-(1+Rate)-Term)}{Rate}$$

(Rate not equal to 0)

PV = Payment*Term

(Rate equal to 0)

- You are to inherit $1,500 from your aunt's estate at the end of each year for the next 10 years. You think that the annual inflation rate over the next 10 years will be 9%. The value of your inheritance in today's dollars is:

  =PV(1500,9%,10) *equals* $9,626.49

RAND()

RAND gives a random number from 0 up to, but not including, 1. A random number is generated every time the spreadsheet is recalculated.

- =RAND()*10+1 *equals* a random number between 1 and 11, excluding 11
- =INT(RAND()*100) *equals* a random integer from 0 through 99

RATE(FutureValue,PresentValue,Term)

RATE gives the fixed interest rate per compounding period needed for an investment of *PresentValue* to grow to a *FutureValue* over several compounding periods (*Terms*).

Works uses the following formula to calculate the rate:

$$\text{RATE} = \left(\frac{\text{FutureValue}}{\text{PresentValue}}\right)^{\frac{1}{\text{Term}}} - 1$$

- A limited partnership plans to buy an apartment building for $750,000 with the expectation of selling it for $1,500,000 in six years. The annual rate of return of the investment is:

  =RATE(1500000,750000,6) *equals* 12.25%

ROUND(x,NumberOfPlaces)

ROUND rounds *x* to the specified *NumberOfPlaces* to the left or right of the decimal point.

If the *NumberOfPlaces* is positive, *x* is rounded to the number of decimal places to the right of the decimal point. If the *NumberOfPlaces* is 0, *x* is rounded to the nearest integer. If the *NumberOfPlaces* is negative, Works rounds to the number of places to the left of the decimal point.

The *NumberOfPlaces* can range from −14 to 14.

- =ROUND(2.15,1) *equals* 2.2
- =ROUND(2.149,1) *equals* 2.1
- =ROUND(−1.475,2) *equals* −1.48
- =ROUND(891,−2) *equals* 900

ROWS(RangeReference)

ROWS gives the number of rows in a *RangeReference*.

If the range B2:D5 is named Table, then:

- =ROWS(Table) *equals* 4
- =ROWS(B2:D5) *equals* 4

For information on	See
Counting columns in a range	COLS

SECOND(TimeNumber)

SECOND gives the number for the second represented by the *TimeNumber*.

For information on	See
Using SECOND	HOUR MINUTE SECOND

SIN(x)

SIN gives the sine of *x*. *X* is an angle measured in radians.

- =SIN(1.047) *equals* 0.866
- =SIN(60*PI()/180) *equals* 0.866

SLN(Cost,Salvage,Life)

SLN uses the straight line depreciation method to find the amount of depreciation in one period.

Cost is the amount you paid for the asset. *Salvage* is the amount you expect to obtain when you sell the asset at the end of its life. *Life* is the number of periods (usually measured in years) you expect the asset to be in use.

SLN uses the following to compute depreciation for a given period:

$$\text{SLN} = \frac{\text{Cost-Salvage}}{\text{Life}}$$

- You buy a tractor for $50,000. You expect the tractor to last 10 years, after which you could probably sell it for $8,000. The depreciation expense for each year using the straight line method is calculated by:

  =SLN(50000,8000,10) *equals* $4200

For information on	See
Double declining balance depreciation	DDB
Sum-of-the-years-digits depreciation	SYD

SQRT(x)

SQRT gives the square root x. If x is negative, Works gives the error value ERR.

- =SQRT(16) *equals* 4

STD(RangeReference0,RangeReference1,...)

STD gives the population standard deviation of the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells are treated as zero. In all references, text is treated as zero.

The standard deviation of a sample of the population is given by the following formula:

STD(RangeReferences)*SQRT(COUNT(RangeReferences)/
(COUNT(RangeReferences) − 1))

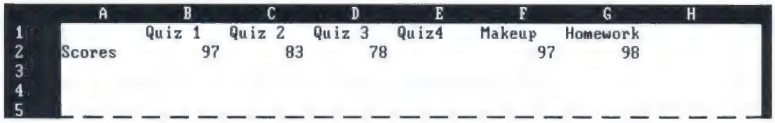
	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

- =STD(B2:F2) *equals* 8.43

SUM(RangeReference0,RangeReference1,...)

SUM gives the total of all values in the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells are treated as zero.



	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

- =SUM(B2:F2) *equals* 355
- =SUM(B2:F2,G2) *equals* 453

SYD(Cost,Salvage,Life,Period)

SYD uses the sum-of-the-years-digits method to find the amount of depreciation in a specific *Period.*

Cost is the amount you paid for the asset. *Salvage* is the amount you expect to obtain when you sell the asset at the end of its life. *Life* is the number of periods (usually measured in years) you expect the asset to be in use. *Period* is the period for which you want to find the depreciation.

The formula to compute SYD for a given period is:

$$SYD = \frac{(Cost-Salvage)*(Life-Period+1)}{\left(\frac{Life*(Life+1)}{2}\right)}$$

- You buy a tractor for $50,000. You expect the tractor to last 10 years, after which you could probably sell it for $8,000. The depreciation expense for the seventh year using the sum-of-the-years-digits method is calculated by:

  =SYD(50000,8000,10,7) *equals* $3,054.55

For information on	See
Double declining balance method	DDB
Straight line method	SLN

TAN(x)

TAN gives the tangent of *x*. *X* is an angle measured in radians.

- =TAN(0.785) *equals* 1
- =TAN(45*PI()/180) *equals* 1

For information on	See
Arctangents	ATAN
Arctangents in x-y coordinates	ATAN2

TERM(Payment,Rate,FutureValue)

TERM gives the number of compounding periods necessary for a series of equal *Payments*, earning a fixed interest *Rate* per period, to grow to a *FutureValue*.

Works uses the following formula to calculate the future value of an ordinary annuity:

$$TERM = \frac{LN\left(1+\left(\frac{FutureValue*Rate}{Payment}\right)\right)}{LN\ (1+Rate)}$$

(Rate not equal to 0)

$$TERM = \frac{FutureValue}{Payment}$$

(Rate equal to 0)

- Every month you put $200 into a savings account earning 8 3/4% interest, compounded monthly. How long will it take to accumulate $5,000?

  =TERM(200,8.75%/12,5000) *equals* 23.05 (months)

TIME(Hour,Minute,Second)

TIME gives a time number for the time specified by the *Hour*, *Minute*, and *Second*. The time number is a fraction ranging from 0.0 through 0.999, representing times from 0:00:00 or 12:00:00 P.M. through 23:59:59 or 11:59:59 P.M.

Hour is generally a number ranging from 0 through 23. *Minute* and *Second* are generally numbers ranging from 0 through 59. If *Minute* or *Second* are outside the range of 0 through 59, TIME adjusts to the correct time.

- =TIME(16,48,0) *equals* 0.7 (time number of 4:48:00 P.M.)
- =(TIME(16,48,0)−TIME(12,0,0))*24*60 *equals* 288 (minutes between 4:48 P.M. and 12:00 P.M.)

For information on	See
Displaying only the hour, minute, or second	HOUR MINUTE SECOND

TRUE()

TRUE gives the logical value 1(TRUE). You can use TRUE() instead of 1 to create more readable logical formulas.

If A1 contains the number 20, then:

- =IF(A1>10, TRUE(),FALSE()) *equals* =IF(A1>10,1,0) *equals* 1

For information on	See
Displaying FALSE	FALSE
Logical formatting	Logical Command, in Chapter 11

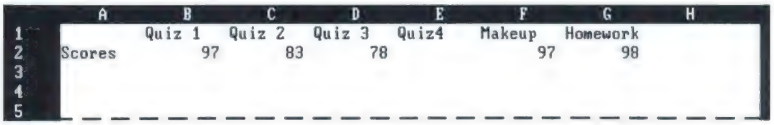
VAR(RangeReference0,RangeReference1,...)

VAR calculates the variance of the numbers in the *RangeReferences*.

The *RangeReferences* may be numbers, cell references, range references, or formulas. In range references, blank cells are ignored. In cell references, blank cells are treated as zero. In all references, text is treated as zero.

The variance of a sample of the population is given by the formula:

VAR(RangeReferences)*COUNT(RangeReferences)/
(COUNT(RangeReferences) − 1)



	A	B	C	D	E	F	G	H
1		Quiz 1	Quiz 2	Quiz 3	Quiz4	Makeup	Homework	
2	Scores	97	83	78		97	98	
3								
4								
5								

■ =VAR(B2:F2) *equals* 71.18

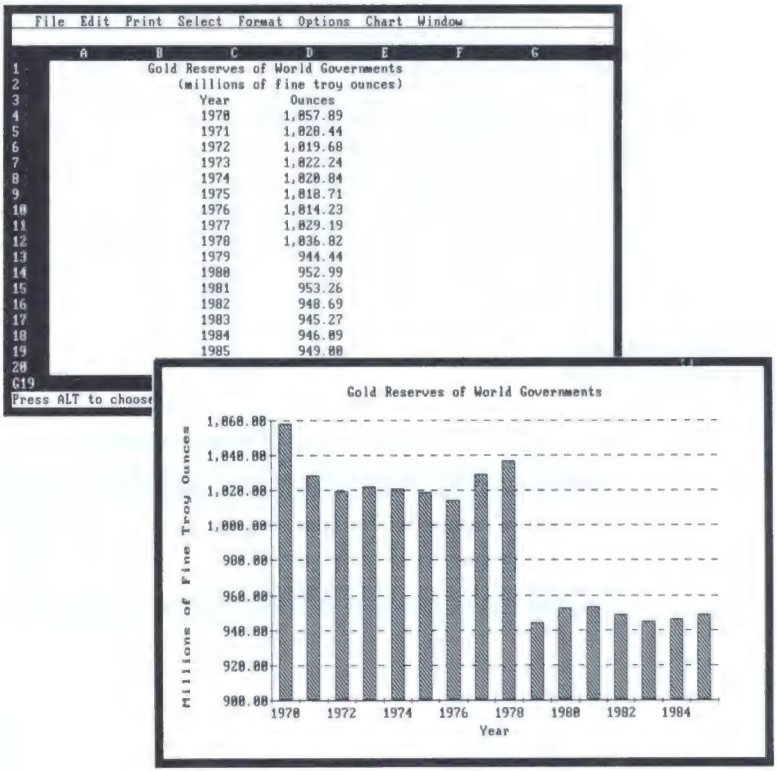
VLOOKUP

See HLOOKUP VLOOKUP.

YEAR(DateNumber)

YEAR gives the number of the year represented by the *DateNumber*.

For information on	See
Using YEAR	DAY MONTH YEAR



Charting turns spreadsheet information into a picture that is easy to interpret, understand, and remember.

Charting is a quick and easy process that can be used for "what-if" analysis. Works updates the active chart whenever you change the related spreadsheet information. For example, if you change a number or a line of text in your spreadsheet, you do not need to redefine your chart. Your chart will reflect these changes automatically.

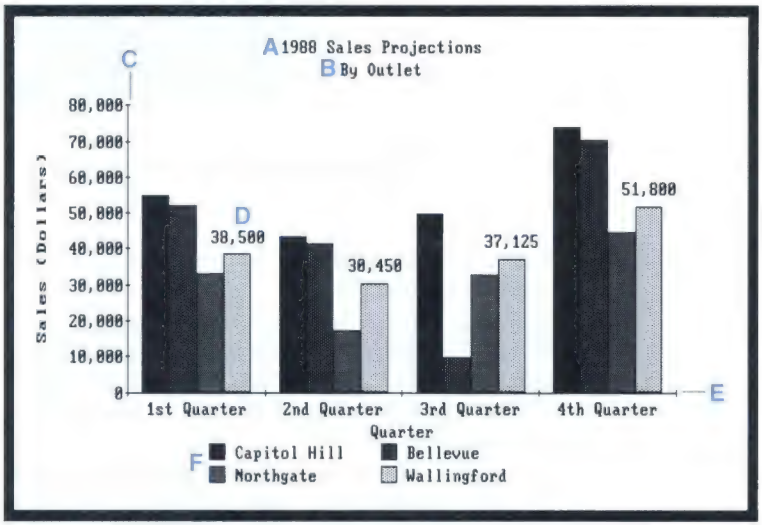
You can quickly look at the same spreadsheet data using different chart formats, such as a bar or line chart, to find the most effective presentation. Each spreadsheet can have up to eight different charts which can be viewed or printed by simply selecting a command.

In this chapter you will learn about charts and how to create them. Topics include:

- Elements of a Chart
- Types of Chart
- Creating a Chart
- Changing the Chart Type
- Labeling a Chart
- Formatting a Chart
- Specifying the Chart Layout
- Printing a Chart

Elements of a Chart

A chart can include many different elements. All charts, except for pie charts, have at least two elements: a Y-axis and an X-axis. Pie charts are built upon a circle divided into elements called slices. You can add additional elements, such as a title or legend, to label your chart and make it easier to understand.

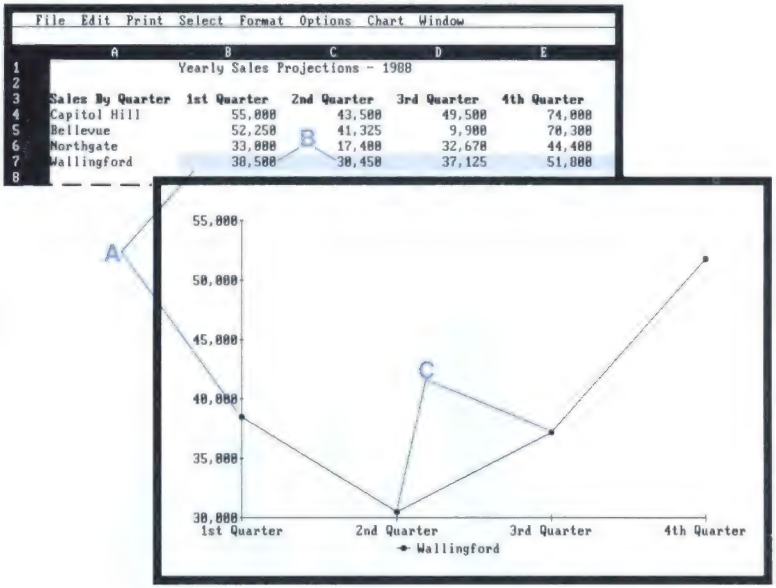


A Chart title
B Chart subtitle
C Y-axis
D Data point label
E X-axis
F Legends

Ranges and Y-Series

Every chart is based on information in spreadsheet ranges. When you create a chart, Works converts the series of numbers in a selected range into data points on a chart. These numbers and points are called *Y-series*. Most of the time, the ranges you chart will be single rows or columns. Works can also create a Y-series from information in multiple columns or rows. Works charts the information in consecutive order, moving from the top to the bottom of each column, and starting at the leftmost column and moving right.

You create one Y-series for each range you select. If you want to present several ranges in a chart, you need to create one Y-series for each range. Each Y-series appears in a chart as a separate line, series of bars, or series of markers.



A Assign each spreadsheet range you want to chart to a Y-series in a chart.

B Each number in the spreadsheet range...

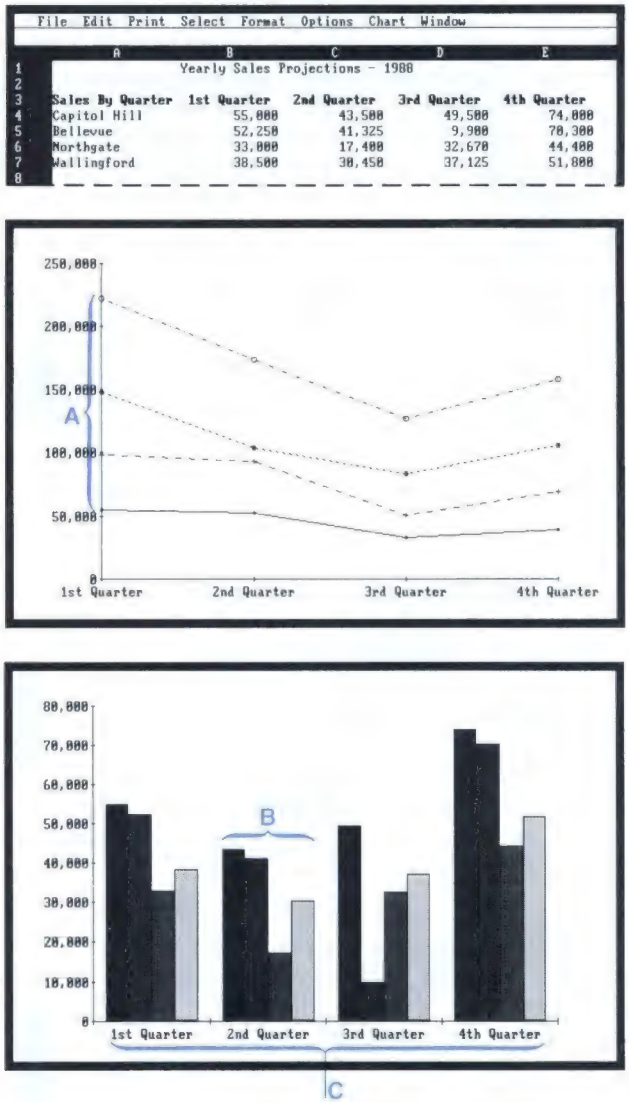
C ...Is shown as a point on the chart.

Data Points and Categories

A data point is simply an individual number in a series of numbers on your chart. Works charts data points as either markers, bars, or slices. In line or bar charts, Works organizes data points into groups called categories. In the following example, the data points are grouped into categories labeled as quarters. Categories let you compare similar data points from different Y-series.

In a line chart, the data points centered over the same position on the X-axis belong to the same category. In a bar chart, the clusters or stacks of bars centered over the same X-axis position belong to the same category. The first numbers in each Y-series are in the first category, the second numbers in each Y-series are in the second category, and so on.

In pie charts, Works only charts the data points in one Y-series. Each data point in each category is displayed as a separate slice of the pie.



A In line charts, Works stacks data points from different Y-series to create a category.

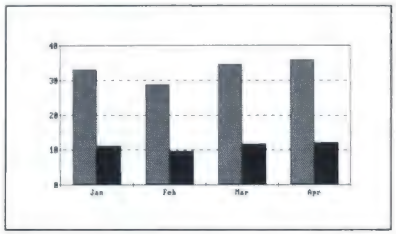
B In bar charts, Works clusters data points from different Y-series into categories.

C Categories

Types of Charts

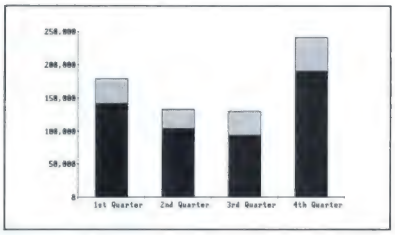
Using the Works charting options, you can create many different kinds of charts. To make it easy for you, Works lists eight common chart types on the Format menu. Each type has special qualities that let you emphasize information in a certain way. The following chart gallery shows each chart type and describes how you can use it to present spreadsheet information.

A **bar chart** uses rectangles called bars to graphically represent each spreadsheet number. Bar charts are useful if you want to compare information in categories that are distinctive, such as city names or identification numbers.



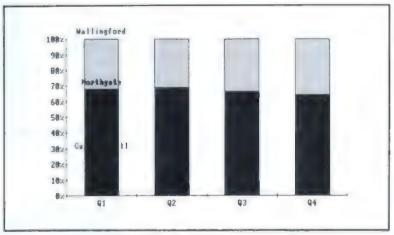
Bar

A **stacked bar chart** stacks bars on top of each other to create a larger bar. The larger bar presents a combined total of the spreadsheet numbers within each category.



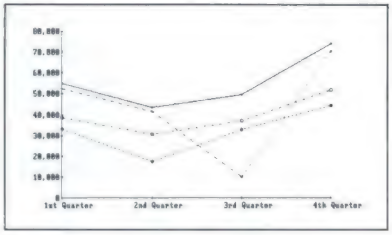
Stacked Bar

Like a stacked bar chart, a **100% bar chart** stacks bars on top of each other. Works measures the bars in percentages rather than individual units to show the percentage contribution of each spreadsheet number in each Y-series to the grand total for each category. A 100% bar chart emphasizes relative size rather than numerical amount.



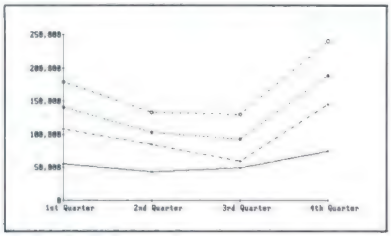
100% Bar

A **line chart** shows a Y-series as dots connected by lines. Line charts are useful if you want to compare information in categories that are ordered chronologically, such as by year or month, or if you want to show trends.



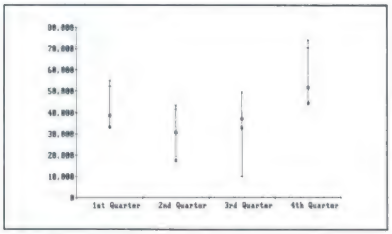
Line

An **area line chart** measures and plots each line based on the line below it rather than from the X-axis. Like the stacked bar chart, it also presents grand totals.



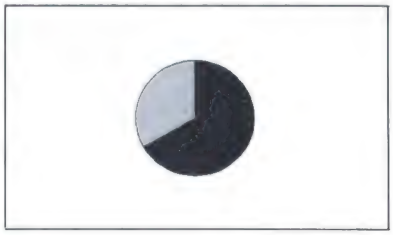
Area Line

A **hi-lo-close chart** looks like some of the stock market charts in your newspaper. It emphasizes the range between the highest and lowest values within a category by connecting them with a line.



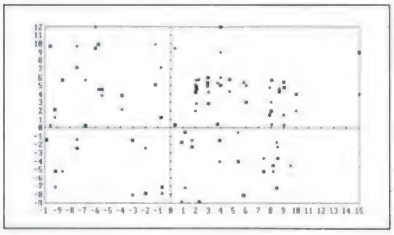
Hi-Lo-Close

A **pie chart** presents the numbers in a single Y-series as separate slices in a pie. Pie charts are useful if you want to compare the individual numbers in a Y-series to the combined total of the Y-series.



Pie

An **X-Y chart** (also called a scatter chart) uses pairs of spreadsheet numbers to plot points along the X- and Y-axes. X-Y charts are useful if the categories along the X-axis are numbers.



X-Y

Creating a Chart

Charting takes a series of numbers in spreadsheet ranges you select and presents them as lines, bars, markers, or pie slices in a chart. You can either create a chart from scratch, or you can use speed charting to let Works create a chart for you. If the ranges you want to chart are adjacent to each other, it is faster to use speed charting. If the ranges you want to chart are scattered throughout your spreadsheet (not adjacent to each other), you must create your chart from scratch.

When you create a chart using speed charting, Works quickly defines the Y-series, labels the categories along the X-axis, and creates legends to label each Y-series. Whether you create a chart using speed charting or from scratch, any changes you make to your chart (for example, if you add titles or change the formats) must be made from scratch. You will learn more about making changes to your chart later in this chapter.

In this section you will learn how to create a chart from scratch, and how to use speed charting.

Creating a Chart from Scratch

Since it is faster and easier to create a chart with speed charting, you'll use it most often to create your charts. In this section you'll learn the concepts of creating a chart from scratch. Then you'll learn how to create charts faster with speed charting in the following section.

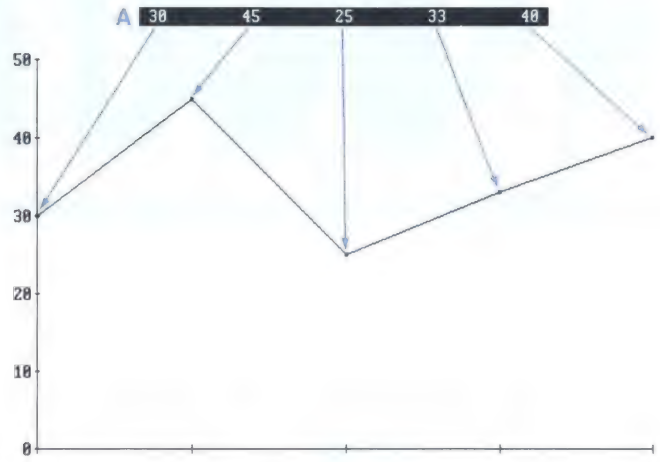
To create a chart from scratch, you need to be in the chart screen.

To display the Chart screen

▣ From the Chart menu, choose Define Chart.

Assigning a Range to a Y-Series

Works uses Y-series to display a series of numbers from a spreadsheet range as points, lines, bars, or pie slices in a chart. Each Y-series in a chart represents data from each spreadsheet range you select. You define a Y-series by assigning the range you've selected to a Y-series.



A A range is shown as a Y-series.

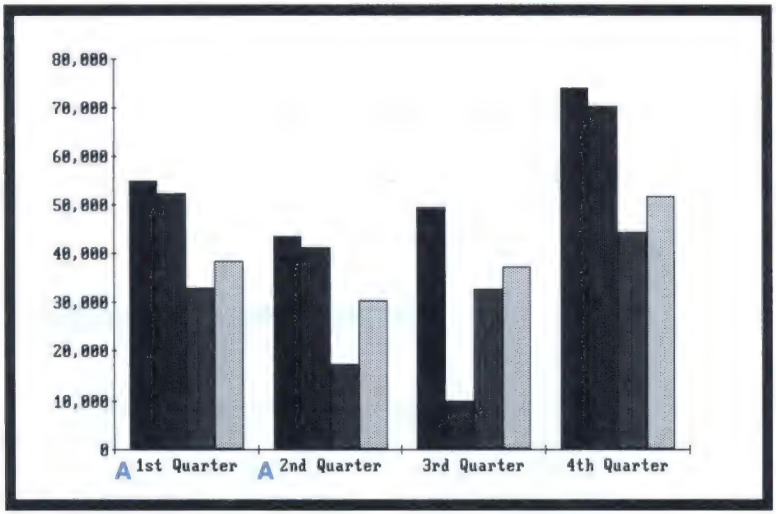
To assign a range to a Y-series

1. In your spreadsheet, select the range containing the series of numbers that you want to chart.
2. From the Data menu, choose 1st Y-Series.

Repeat the procedure for each range that you want to chart. Be sure to assign the second range you select to the 2nd Y-series, the third range you select to the 3rd Y-series, and so on.

Labeling the Categories

You can use text or numbers from your spreadsheet to label each category. To label the categories, you assign the text or number values in your spreadsheet to the X-series. Works displays the labels below each category along the X-axis.



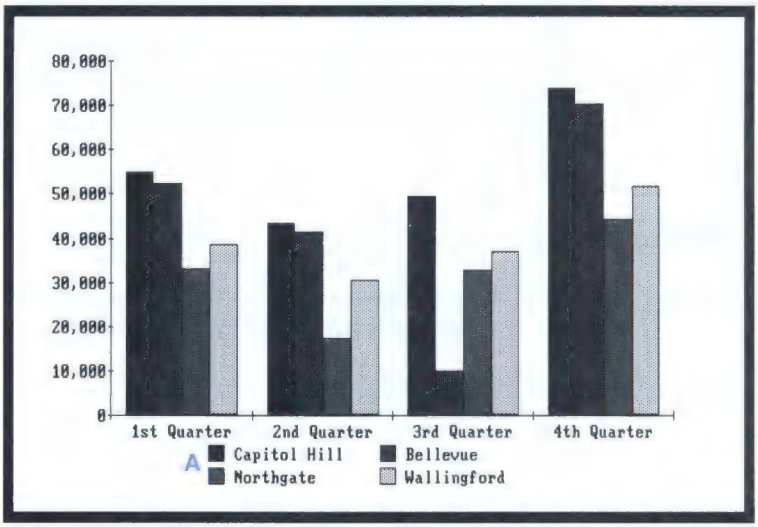
A Labels

To label the categories

1. Select the values in your spreadsheet that you want to use to label the categories.
2. From the Data menu, choose X-Series.

Creating Legends

You can label each Y-series with a legend. When you create a legend, Works displays the format and name of each Y-series across the bottom of your chart. The format is the color, pattern, or marker that Works uses to distinguish between the Y-series in a category. You will learn more about formatting a Y-series later in this chapter.



A Legends

To create a legend

1. From the Data menu, choose Legends.
2. In the Series list box, select the Y-series that you want to label.
3. In the Legend text box, type a phrase or the reference of a cell containing the label for the selected Y-series.
4. Press ENTER.

Note Text you enter in the Legend or Titles dialog box that resembles a cell or range reference should be preceded by a double quotation mark ("). For example, if you wanted a legend named C13, it should be entered as *"C13*.

Hiding Legends

Once you've created legends, Works displays them across the bottom of your chart. You can tell Works whether or not you want to display the legends by turning the Show Legends command on or off. Turning off the Show Legends command does not change the legends in any way; they just don't appear on your chart.

To hide or display legends

- From the Options menu, choose Show Legends.

  A mark beside Show Legends means that the legends will be displayed.

Viewing a Chart

Once you've created a Y-series, you can view the chart at any time. Works uses the entire screen to display the chart.

To view a chart

- From the Chart menu, choose View.

To return to the Chart screen

- Press any key.

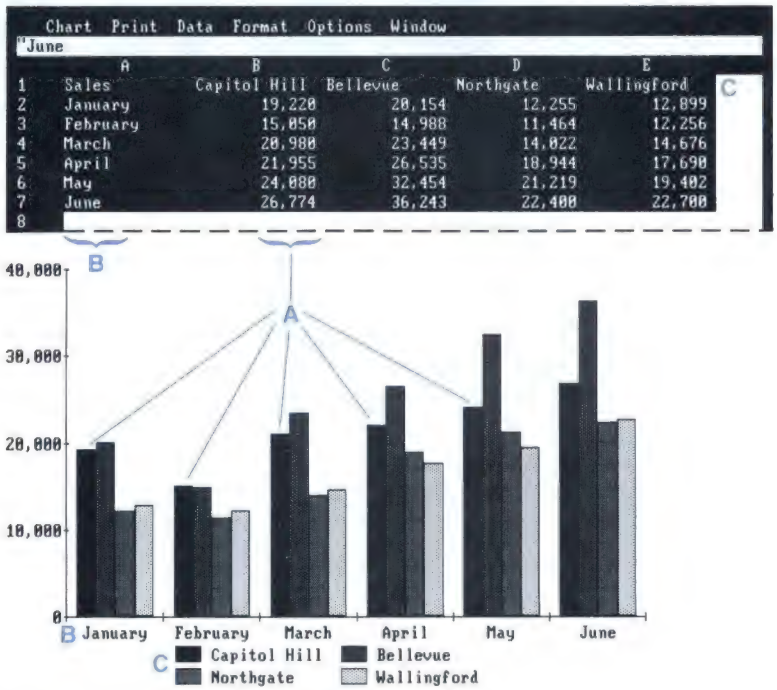
Creating a Chart with Speed Charting

Instead of creating a chart from scratch, you can use speed charting to create Y-series, X-series, and legends in one step. To use speed charting, the ranges you want to chart and the category and legend names must be adjacent to each other.

Works creates the Y-series based on the shape of the selected range:

- If there are more rows than columns in a range, Works assumes each column of the range is a separate Y-series.
- If there are as many or more columns than rows in a range, Works assumes each row of the range is a separate Y-series.

If the values in the first row or column are numbers, Works makes the first row or column the 1st Y-series, the second row or column the 2nd Y-series, and so on.

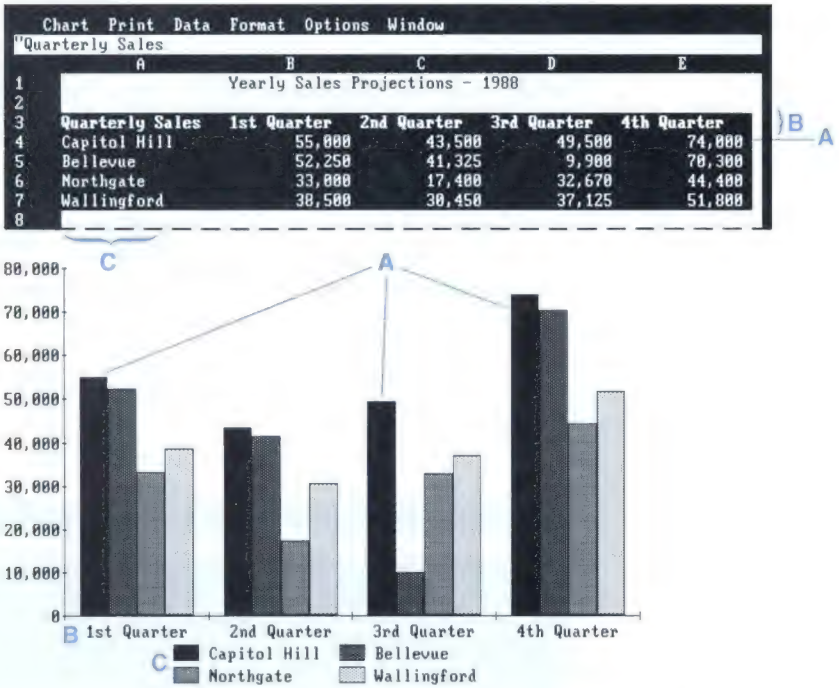


If there are more rows than columns...

A Each column of numbers becomes a separate Y-series.

B The selected text to the left of the Y-series becomes the X-series and Works labels the X-axis with the X-series text.

C The selected text above the Y-series becomes the legend.



If the number of columns is the same or more than the number of rows...

A Each row becomes a separate Y-series.

B The selected text above the Y-series becomes the X-series and Works labels the X-axis with the X-series text.

C The selected text to the left of the Y-series becomes a legend.

To speed chart

1. Select all of the cells containing the numbers and the category and legend labels that you want to chart.
2. From the Chart menu, choose New.

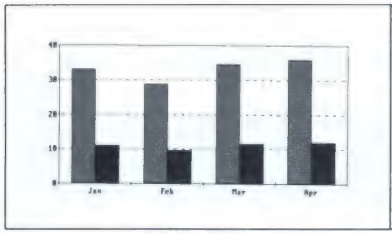
This moves you to the Chart screen from where you can view the chart.

To view the chart

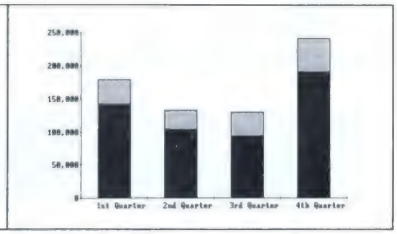
- From the Chart menu, choose View.

Changing the Chart Type

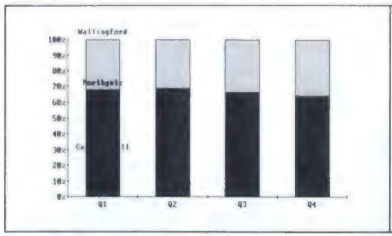
The Format menu on the Chart screen lists eight common types of charts that you can choose from. If you do not specify the type of chart you want, Works automatically creates a bar chart. You can change a chart to a different type by choosing the desired type from the Format menu. Works adjusts the chart's elements to the new chart type.



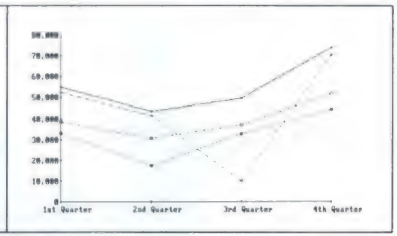
Bar



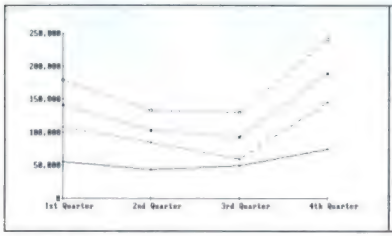
Stacked Bar



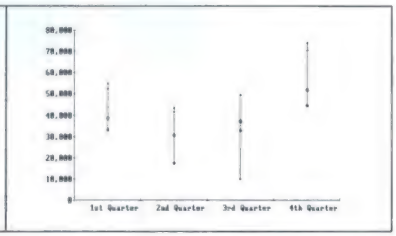
100% Bar



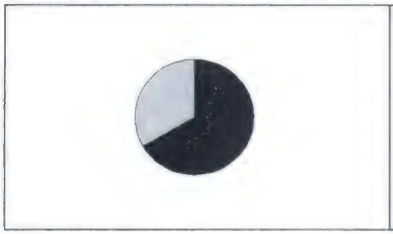
Line



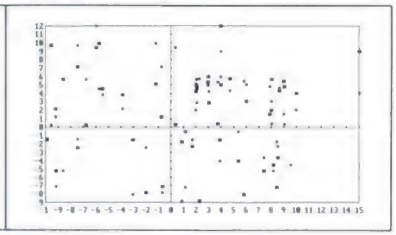
Area Line



Hi-Lo-Close



Pie



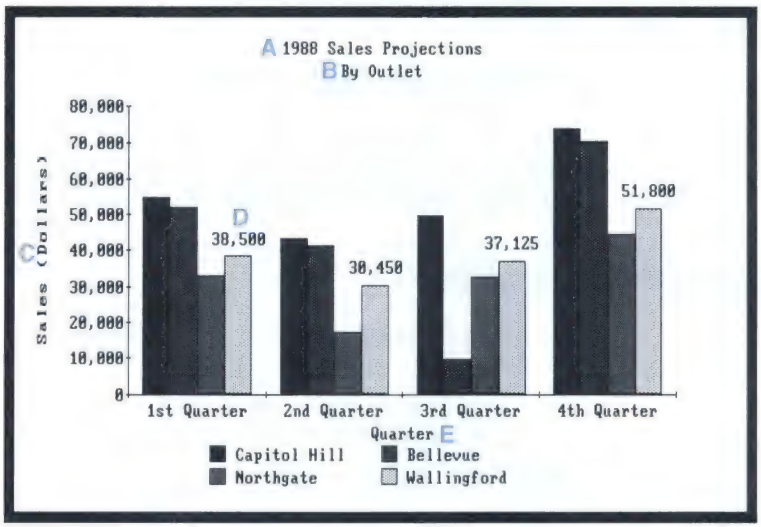
X-Y

To choose a chart type

- From the Format menu, choose the command for the chart type you want.

Labeling a Chart

Titles and labels make a chart easier to read and interpret. You can create a title and subtitle for the chart, include titles for each axis, and label each data point in a Y-series.



A Chart title
B Chart subtitle
C Y-axis title
D Data point label
E X-axis title

Creating Chart and Axes Titles

You can create a descriptive title and subtitle for your chart and for each of the axes. Works centers the title at the top of the chart, and the subtitle below it. Works centers the X-axis title below the X-axis, and centers the Y-axis title along the Y-axis.

To create a chart and axes titles

You can use any text you want as a title. If the title resembles a cell reference, precede it with a double quotation mark ("). For example, if you want to use C13 as a title, enter it as *"C13*.

1. From the Data menu, choose Titles.

2. In the Chart Title text box, type the chart title.
3. In the Subtitle text box, type the subtitle.
4. In the X-Axis text box, type the X-axis title.
5. In the Y-Axis text box, type the Y-axis title.
6. In the Right Y-Axis text box, type the right Y-axis title. Your chart may not have a right Y-axis.
7. Press ENTER.

Labeling Each Data Point

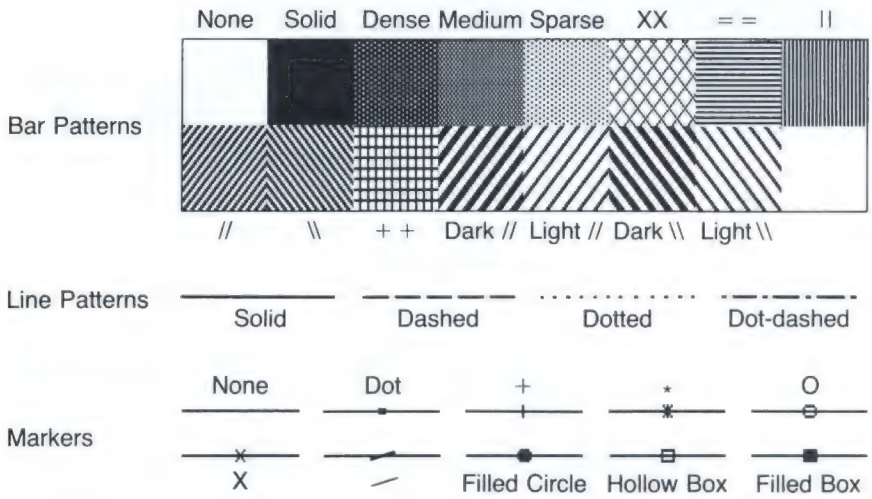
You can label each data point in your chart using text or numbers from the spreadsheet cells. This is useful if you want to display the value of each data point above its bar, or, in the case of line charts, next to its marker.

To label each data point in a Y-series

1. Select the range of cells in your spreadsheet that contains the labels for the data points.
2. From the Data menu, choose Data Labels.
3. In the Series list box, select the Y-series you want to label.
4. Choose the Create button.

Formatting a Chart

Works uses colors, patterns, and markers to create a special format for each line, bar, or pie slice in a chart. You can change the format of your chart using the Data Format command.



To format a Y-series

1. From the Format menu, choose Data Format.
2. In the Series list box, select the Y-Series you want to format. If you are formatting a pie chart, select a slice from the Slices list box.
3. In the Colors, Patterns, or Markers list boxes, select the options you want.

   The options shown in the Data Format dialog box vary, depending on the type of chart you are formatting.

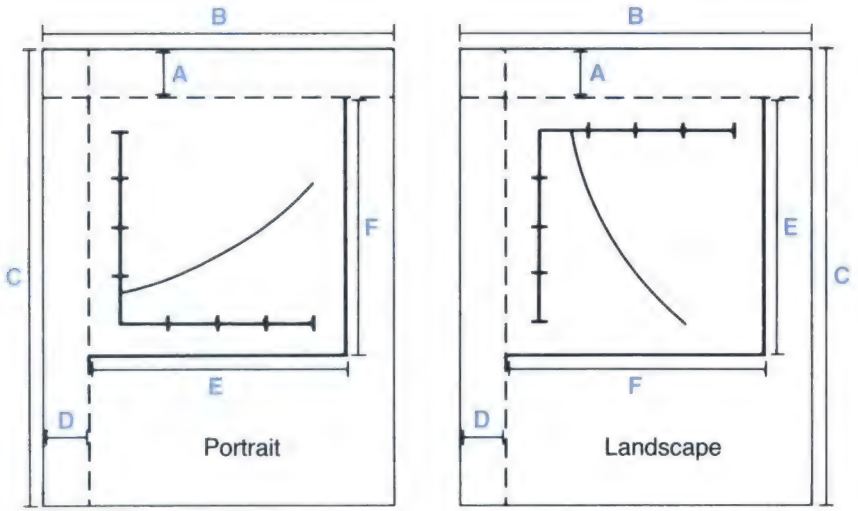
If you are formatting	You can select
A line chart	A pattern, color, or marker
A bar chart	A pattern or color
A pie chart	A pattern and color, and whether or not the slice is exploded (separated) from the pie.

   If you want Works to choose an option for you, select Auto in any list box. Works then assigns a color, pattern, or marker to the bars, lines, or pie slices in your chart to make each unique.
4. Choose Format to apply the selected options to the Y-series or slice. Choose Format All to apply the selected options to all the Y-series or slices in the chart.

Specifying the Chart Layout

If you want to print a chart, you need to tell Works how you want it to look on paper. You use the Layout command to specify:

- The top and left margins.
- The size of the chart.
- The orientation of the chart (whether it prints down (landscape) or across (portrait) on the page).



A Top margin
B Page width
C Page length
D Left margin
E Chart width
F Chart height

To specify the layout of a chart

1. From the Print menu, choose Layout.
2. In the Top Margin text box, type the height, in inches, of the top margin.
3. In the Left Margin text box, type the width, in inches, of the left margin.
4. In the Chart Height text box, type the height, in inches, you want for the chart.
5. In the Chart Width text box, type the width, in inches, you want for the chart.

6. In the Page Length text box, type the length of the paper, in inches, on which you want to print the chart.
7. In the Page Width text box, type the width of the paper, in inches, on which you want to print the chart.
8. Under Orientation, select Portrait to print the chart across the page. Select Landscape to print the chart down the page.
9. Press ENTER.

Note Length always measures the distance between the top and bottom edges of the paper as you feed it into the printer. Width always measures the distance between the left and right edges of the paper as you feed it into the printer. Similarly, chart height vertically measures the chart, and chart width horizontally measures the chart regardless of orientation.

If you want to accept all the displayed values in the dialog box, press ENTER, or press TAB to move to the next text box.

Printing a Chart

Works prints the chart on paper just as it appears on the screen. You can print multiple copies of the chart, or you can print the chart to a disk file. You can also include charts in a Works Word Processor file. For information on inserting charts in Word Processor files, see Chapter 16, "Exchanging Information Between Tools."

To print a chart

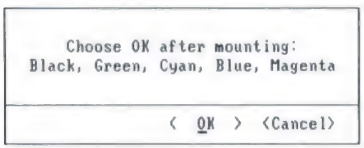
1. From the Print menu, choose Print.
2. In the Number of Copies text box, type the number of copies you want to print.
3. If you want to print the chart to a disk file, turn on the Print to File check box and type the filename in the File Name text box.
4. Press ENTER.

Printing a Chart on a Plotter

You can print your charts in color on your plotter.

To print a chart on a plotter

1. From the Print menu, choose Print.
2. Mount the pens corresponding to the colors in the dialog box before you begin printing.
3. Choose the OK button to print the chart.



If your chart has more colors than the plotter can hold at one time, the dialog box will reappear after Works has used all the pens mounted on your plotter. If this occurs, you need to mount the next set of pens and then choose the OK button to continue printing.

The Print dialog box has a Slow Pen Speed check box you can use to change the pen speed. Use slow speed for plotting on transparencies to get a crisp-looking chart, or when your pens are old or dry. Use a fast pen speed for plotting on paper.

For information on using plotters, see Appendix B, "Printing, Fonts, and Styles."

Leaving the Chart Screen

When you have finished creating, formatting, or changing your charts, you can leave the Chart screen and return to the Spreadsheet screen.

To leave the Chart screen

- From the Chart menu, choose Exit Chart.

This is the reference chapter for Charting. It contains information about the commands, about performing charting tasks, and about other features.

Topics in this chapter are listed in alphabetical order.

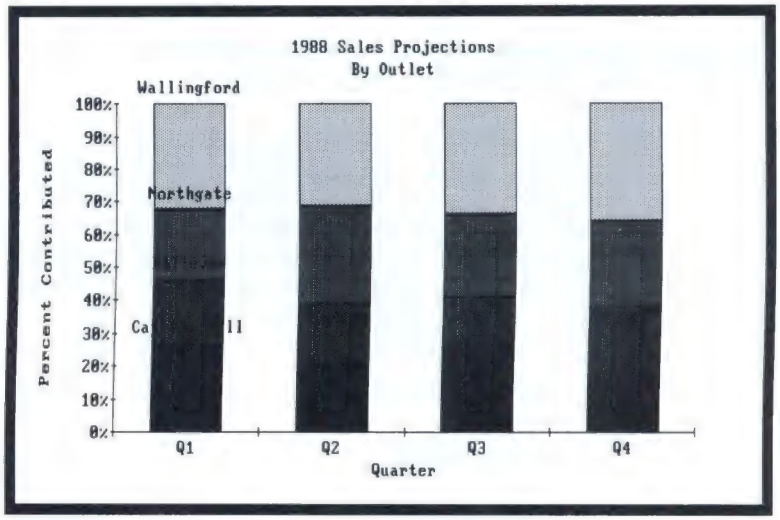
A task topic describes the concepts and procedures for a task. Some task topics describe using one feature or command. Other task topics describe several related features or commands.

A command topic describes the purpose of the command and each of the command's options.

At the end of most topics is a list of related topics.

The best way to learn Works is to use the tutorial, Learning Microsoft Works. By working through the practices there, you will learn the basics and be introduced to some of Charting's advanced features.

100% Bar Command (Format Menu)



The 100% Bar command changes the active chart to a 100% bar chart. In a 100% bar chart, the data points in each category are stacked from bottom to top, starting with the first Y-series. The bars are equal in length and extend from 0 to 100 percent. Use a 100% bar chart to compare the percentage of each data point to the total for each category.

In a 100% bar chart, all the numbers in each Y-series should be greater than 0. When you create a 100% bar chart, Works automatically creates a 100% Y-axis scale and chooses a color and pattern for the bars.

To create a 100% bar chart

▣ From the Format menu, choose 100% Bar.

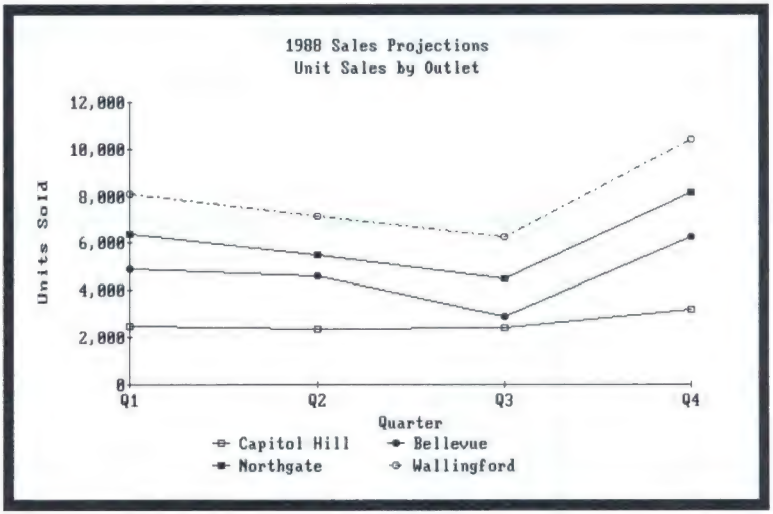
For information on	See
Other bar charts	Stacked Bar Command Bar Command
Using patterns, colors, or markers	Data Format Command

1st to 6th Y-Series Commands (Data Menu)

The 1st to 6th Y-Series commands assign Y-series to the numbers in the currently selected spreadsheet range. This command is used when creating a chart from scratch. Most of the time, the range you chart will be a single row or column. Works can also create a Y-series from information in multiple rows or columns. Works charts the information consecutively from the top to the bottom of each column, beginning at the leftmost column and moving right.

For information on	See
Assigning a spreadsheet range to a Y-series	Y-Series
Creating a Y-series	Creating a Chart Y-series
Deleting a Y-series	Deleting Y-series
Operations with Y-series	Series Command

Area Line Command (Format Menu)



The Area Line command changes the active chart to an area line chart. In an area line chart, the data points in each category are measured and charted according to the data points immediately below them. Area line charts show the contribution of each data point to the total for each category.

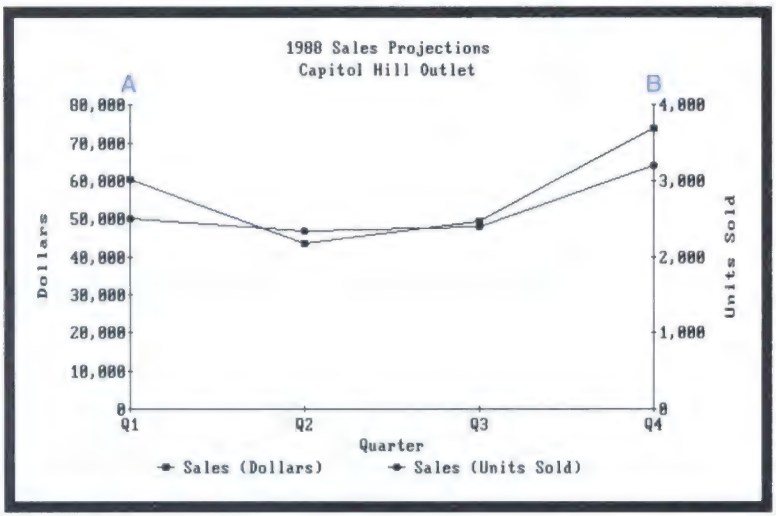
All the numbers in each Y-series of an area line chart should be greater than 0. When you create an area line chart, Works automatically creates a stacked Y-axis scale and chooses a color and marker for each line.

To create an area line chart

- From the Format menu, choose Area Line.

For information on	See
Changing the Y-axis scale	Scale
Other line charts	Line Command
Using patterns, colors, or markers	Data Format Command

Axes



A Left Y-axis
B Right Y-axis

All charts except pie charts have an X-axis and a left Y-axis. The X-axis is a horizontal line that labels the categories or measures the Y-series. The Y-axis is a vertical line that labels or measures the Y-series.

The scales along the Y-axes measure the value of the charted numbers. Works arranges the categories along the X-axis and charts the spreadsheet numbers as data points above them (except in X-Y charts). Data points that are in the same Y-series, or numbers that are in the same row or column in a spreadsheet, are in the same category.

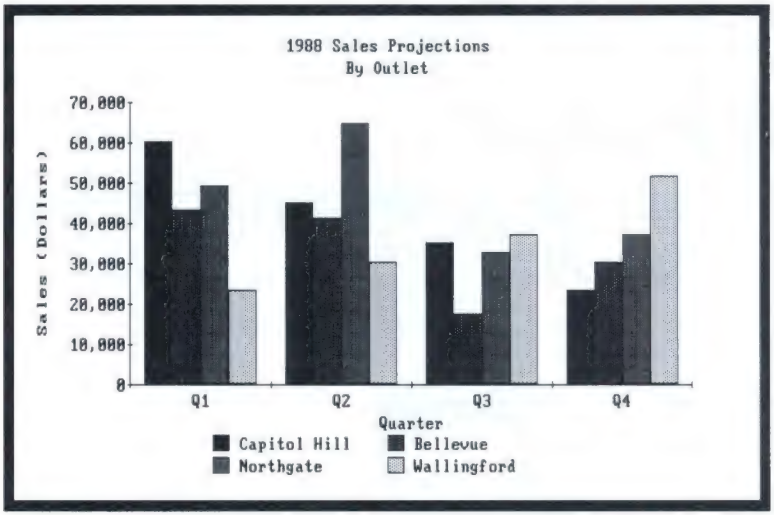
Assigning a name to each category makes the chart easier to read. For example, all points representing sales figures for the month of January could be grouped and charted in a category called January. For more information on labeling categories, see "Creating a Chart," in this chapter.

In X-Y charts, the X-axis behaves just like the Y-axis. See "X-Y Command" in this chapter for more information about X-Y charts.

Note A right Y-axis is optional. Charts with two Y-axes can have a different scale on each axis for measuring the different Y-series assigned to them. For more information about specifying a right Y-axis, see "Two Y-Axes Command."

For information on	See
The Y-axis	Y-Axis Command
The X-axis	X-Axis Command

Bar Command (Format Menu)



The Bar command changes the active chart to a bar chart. Bar charts show you the numeric size of each data point in a Y-series. Groups of bars that are side by side let you compare the numeric size in each category.

Works automatically creates a bar chart unless you specify another type. If you change the active chart to a bar chart, Works automatically creates a normal Y-axis scale and chooses a color and pattern for each bar.

To create a bar chart

- From the Format menu, choose Bar.

For information on	See
Bar charts showing numeric sizes and grand totals	Stacked Bar Command
Bar charts showing percentage contribution of each Y-series to the total of each category	100% Bar Command

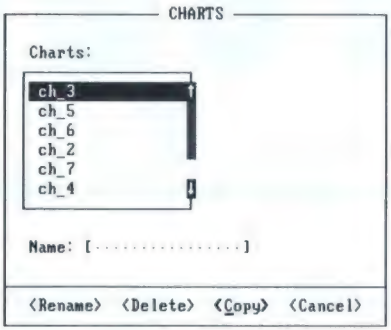
Borders

You can tell Works to draw a border around your chart.

For information on	See
Drawing a border around a chart	Show Border Command

Charts Command (Chart Menu)

The Charts command copies, deletes, and names or renames charts. The Charts command is on the Chart menu in both the Spreadsheet and Chart screens.



Charts Lists the charts you can name, delete, or copy.

Name Contains the new name for the selected chart.

Rename Assigns the name in the Name text box to the selected chart.

Delete Deletes the selected chart from the spreadsheet.

Copy Duplicates the selected chart. The copied chart becomes the active chart and is given the name you typed in the Name text box.

For information on	See
Copying charts	Copying a Chart
Deleting charts	Deleting
Renaming charts	Naming a Chart

Colors

You can tell Works to display each Y-series in a line or bar chart, or each category in a pie chart, in a different color. Different colors make your chart easier to read by distinguishing the different Y-series or categories.

For information on	See
Changing colors in a chart	Formatting a Chart
Displaying a list of colors supported by your printer	List Printer Formats Command
Switching between color and black-and-white	Format For B&W Command

Copying a Chart

You can create variations of an existing chart by copying it and then making changes to it. You can copy a chart from either the Spreadsheet screen or the Chart screen. After you copy a chart, the copied chart becomes the active chart. Any changes to the copied chart do not affect the original chart.

To copy a chart

1. From the Chart menu, choose Charts.
2. Select the chart you want to copy from the Charts list box.
3. Type a new name for the copy of the chart, or let Works choose a name for you.
4. Choose the Copy button.

Note You can also copy charts to Works Word Processor files. For more information, see Chapter 16, "Exchanging Information Between Tools."

For information on	See
Naming or deleting charts	Charts Command

Creating a Chart

You can create a chart from scratch or with the speed charting method. If the ranges you want to chart are adjacent to each other, it is faster to use speed charting. If the ranges you want to chart are not adjacent to each other, you must create your chart from scratch.

The most basic chart can be created from scratch by assigning each spreadsheet range you want to chart to a Y-series. Works automatically determines the Y-axis scale, assigns colors to the Y-series, and creates a bar chart. For a more descriptive chart you can label the categories and create legends to label each Y-series.

Even if you use speed charting, any changes you make to your chart (e.g., if you add titles, format the Y-series, or change the chart type) need to be made from scratch.

Creating a Chart from Scratch

You must be in the Chart screen to create a chart from scratch.

To enter the Chart screen

- From the Chart menu, choose Define.

To create a basic bar chart

1. Select the range containing the series of numbers that you want to chart from the spreadsheet.
2. From the Data menu, choose 1st Y-Series.

Repeat these steps for each range that you want to chart. Assign the second range you select to the 2nd Y-series, the third range you select to the 3rd Y-series, and so on.

To label the X-axis categories

1. Select the cells containing the text or numbers you want to use to label the X-axis categories.
2. From the Data menu, choose X-Series.

If the category labels are so long that they overlap along the X-axis, you can either shorten the label or tell Works to skip categories between labels.

To skip categories

1. From the Options menu, choose X-Axis.
2. In the Label Frequency text box, type the number of the interval you want. If you type *2*, for example, Works displays every other label.
3. Press ENTER.

To create legends

1. From the Data menu, choose Legends.
2. From the Series list box, select a Y-series.
3. In the Legend text box, type the legend name or the reference of a cell containing a name for the selected Y-series.

   You can use any text you want as a legend name. If the legend name resembles a cell reference, precede it with a double quotation mark (*"*). For example, to use C13 as a legend name, enter it as *"C13*.
4. Press ENTER.

Repeat the steps above to create a legend for each Y-series.

Once you've created legends, you can display them on your chart or hide them from view. For more information, see the "Show Legends Command" topic in this chapter.

Speed Charting

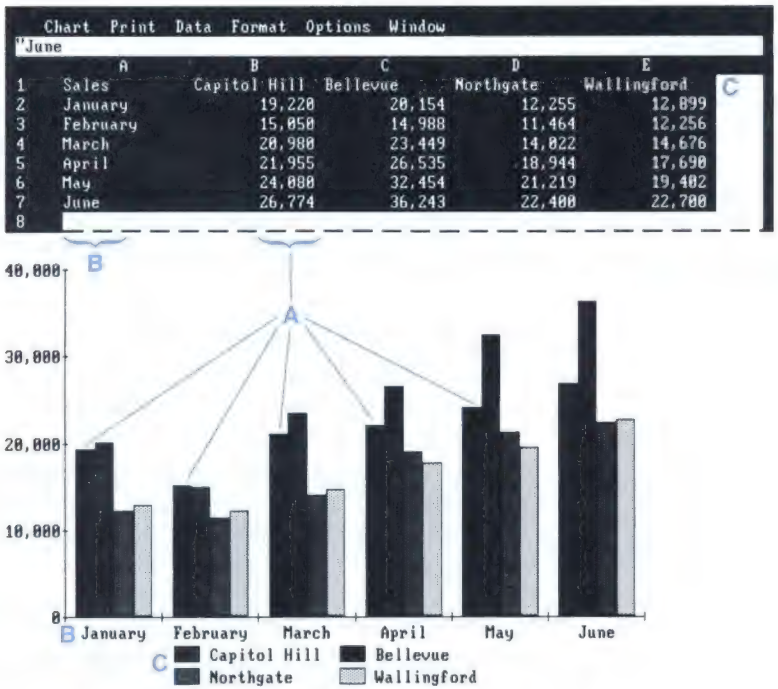
If the ranges and the category and legend names are adjacent to each other on the spreadsheet, you can use speed charting to create a complete chart in one step. Works automatically creates each Y-series, the X-axis, and the legends, and draws a bar chart.

You do not need to be in the Chart screen to use speed charting.

Works creates the Y-series based on the shape of the selected range.

- If there are more rows than columns in a range, Works assumes that each column of the range is a separate series.
- If there are as many or more columns than rows in a range, Works assumes that each row of the range is a separate series.

If the values in the first row or column are numbers, Works makes the first row or column the 1st Y-series, the second row or column the 2nd Y-series, and so on.

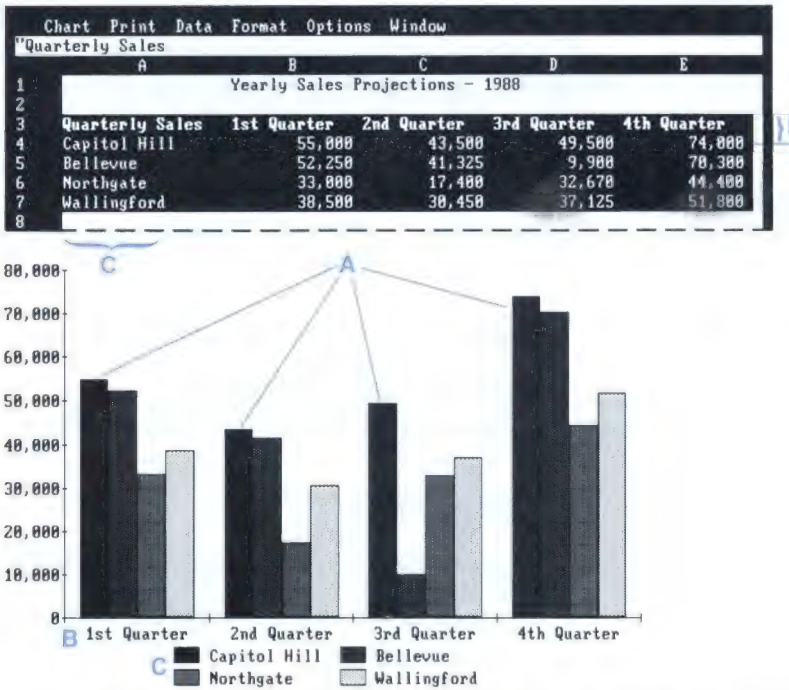


If there are more rows than columns...

A Each column of numbers becomes a separate Y-series.

B The selected text to the left of the Y-series becomes the X-series and Works labels the X-axis with the X-series text.

C The selected text above the Y-series becomes the legend.



If the number of columns is the same or more than the number of rows...

A Each row becomes a separate Y-series.

B The selected text above the Y-series becomes the X-series and Works labels the X-axis with the X-series text.

C The selected text to the left of the Y-series becomes a legend.

To speed chart

1. Select all of the ranges and category and legend names to be charted.
2. From the Chart menu, choose New.

Viewing a Chart

After creating a Y-series, or creating a complete chart using speed charting, you can view your chart at any time.

To view a chart

1. From the Chart menu, choose View.
2. Press any key to return to the Chart screen.

Changing the Chart Type

Once you've created a chart, you can easily switch to one of the eight common chart types listed on the Format menu and view the results, or experiment with the commands on the Options menu to design your chart.

To change the chart type

- From the Format menu, choose one of the eight chart types.

For information on	See
Changing colors, patterns, and markers	Formatting a Chart
Creating your own type of chart	Mixed Line & Bar Command Two Y-Axes Command X-Axis Command Y-Axis Command
Titling charts and axes, and labeling data points	Labeling and Titling a Chart

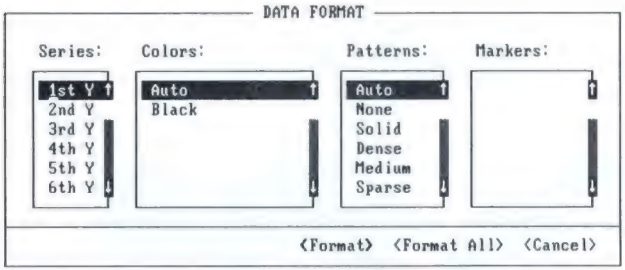
Data Format Command (Format Menu)

The Data Format command changes the colors, patterns, and markers for each Y-series in the active chart. If the active chart is a pie chart, this command changes the pattern and color of each slice, and determines whether or not the slice is exploded (separated) from the rest of the pie.

You can format each Y-series individually, or format all line series or bar series at the same time. Works displays all the formatting options available on your computer in the dialog box.

Formatting Bar, Line, and X-Y Charts

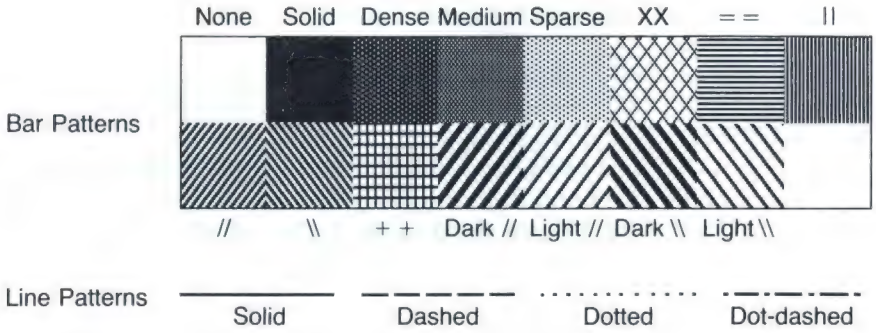
You can assign colors and patterns to bar, line, and X-Y charts. If the active chart is a line chart, you can also assign markers to each data point for each Y-series.



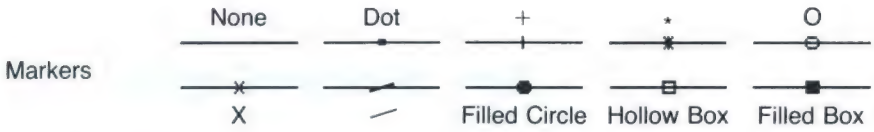
Series Lists the Y-series to be formatted. The options in the other list boxes change to show the settings for the selected Y-series.

Colors Lists the colors available for displaying and printing the selected Y-series. If you select Auto, the default setting, Works chooses a color for you.

Patterns Lists the patterns available for displaying and printing the selected Y-series. If you select Auto, the default setting, Works chooses a pattern for you. The patterns available depend upon the chart's type.



Marker Lists the markers available for marking the data points in a line series or X-Y chart. If you select Auto, the default setting, Works chooses a marker for you.



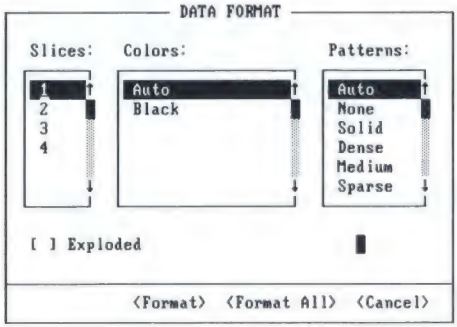
Format Applies the options to the selected Y-series.

Format All Applies the options to every Y-series represented by a bar or a line. Works chooses bar or line based on the selected Y-series.

Note The Colors and Patterns list boxes display either the colors or patterns that are available for your screen or those that are available for your printer. Before you print your chart, be sure that the colors and patterns displayed are available for your printer. See "List Printer Formats Command" in this chapter for more information.

Formatting Pie Charts

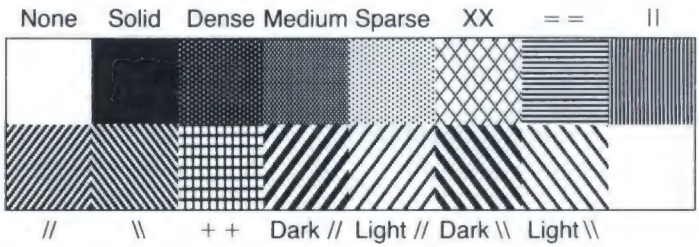
If the active chart is a pie chart, the slice number corresponds to the position of the data point in the Y-series that the slice represents.



Slices Lists the pie slices to be formatted. The options in the other list boxes change to show the settings for the selected slice.

Color Lists the colors available for displaying and printing the selected slice. If you select Auto, the default setting, Works chooses a color for you.

Pattern Lists the patterns available for displaying and printing the selected slice. If you select Auto, the default setting, Works chooses a pattern for you.



Exploded If the Exploded check box is turned on, the selected pie slice is exploded (separated). If the check box is turned off, the slice is unexploded.

Format Applies the options to the selected slice.

Format All Applies the options to all the slices in the chart.

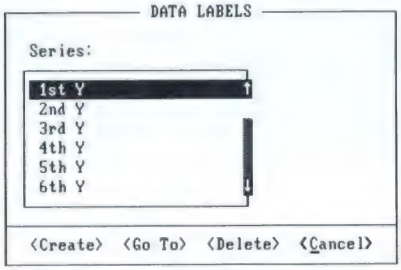
Note The Colors and Patterns list boxes display either the colors or patterns that are available for your screen or those that are available for your printer. Before you print your chart, be sure that the colors and patterns displayed are available for your printer. See "List Printer Formats Command" in this reference for more information.

For information on	See
Changing a color, a pattern, or a marker	Formatting a Chart

Data Labels Command (Data Menu)

The Data Labels command labels the data points in a Y-series using values from a range of spreadsheet cells. This command also displays the spreadsheet cell or range containing the labels for a specified Y-series, and removes a range containing labels for the specified series.

Most of the time, the range you chart will be a single row or column. Works can also create a Y-series from multiple rows or columns. Works charts the information consecutively, moving from the top to the bottom of each column and starting at the leftmost column and moving right.



Series Lists the Y-series to be labeled.

Create Labels the selected Y-series with the selected values from the spreadsheet.

Go To Selects the range holding the labels for the selected Y-series.

Delete Deletes the labels for the selected Y-series from the chart.

For information on	See
Labeling categories	Creating a Chart
Labeling data points	Labeling and Titling a Chart
Selecting a Y-Series	Y-Series

Define Command (Spreadsheet Chart Menu)

The Define command switches from the Spreadsheet screen to the Chart screen. You use the menus on the Chart screen's menu bar when you create charts from scratch. If you have not created any charts for the spreadsheet and no range is selected, Works displays a Chart screen and defines a blank chart.

To display the Chart screen

- From the Chart menu on the Spreadsheet screen, choose Define.

For information on	See
Creating a chart from scratch	Creating a Chart

Deleting

You can delete any Y-series, X-series, label, legend, or title from a chart. You can also delete a chart from the spreadsheet.

To delete a Y-series or an X-series

1. From the Data menu, choose Series.
2. In the Series list box, select the Y-series or X-series you want to delete.
3. Choose the Delete button.

To delete a data label

1. From the Data menu, choose Data Labels.
2. In the Series list box, select the Y-series whose label you want to delete.
3. Choose the Delete button.

To delete a title

1. From the Data menu, choose Titles.
2. Select the title you want to delete.
3. Press the DELETE key.

   To delete another title, repeat steps 2 and 3.
4. Press ENTER.

To delete a legend

1. From the Data menu, choose Legends.
2. In the Series list box, select the Y-series whose legend you want to delete.
3. Press the DELETE key.
4. Press ENTER

Deleting Charts

Each spreadsheet can have up to eight charts. If you have eight charts defined and you want to create an additional chart for a spreadsheet, you need to delete an existing chart.

You can delete a chart from either the Spreadsheet screen or the Chart screen.

To delete a chart

1. From the Chart menu, choose Charts.
2. In the Existing Charts list box, select the chart you want to delete.
3. Choose the Delete button.

For information on	See
Hiding legends without deleting them	Show Legends Command

Exit Chart Command (Chart Menu)

Shortcut key: F10

The Exit Chart command returns you from the Chart screen to the Spreadsheet screen.

To return to the Spreadsheet screen

- From the Chart menu, choose Exit Chart.

Fonts

A font is a type style. For example, most of this manual is printed in a Times Roman font and the heading for this entry is in a Helvetica font. Font sizes are measured in points. A point is 1/72 of an inch. The text in this paragraph is 10 points high. Title Font and Other Font commands on the Print menu let you specify fonts for all the text in your chart.

When you view your chart, Works can display text in fonts supported by your printer, or in fonts supported by your monitor.

For information on	See
Choosing a font for a chart title	Title Font Command
Choosing a font for a chart subtitle, axes titles, data labels, scale marks, and legends	Other Font Command
Displaying screen or printer fonts	Show Printer Fonts Command

Format For B&W Command (Options Menu)

The Format For B&W command switches between displaying the chart in color and displaying it in black and white. If you've been viewing your chart in color, but want to print it in black and white, you can use this command to see how your chart will look before printing it. If the command is marked, Works displays your chart in black and white, using different patterns in place of colors to show the charted information.

To switch between color and black and white

- From the Options menu, choose Format For B&W.

Formatting a Chart

Works uses colors, patterns, and markers to distinguish each line, bar, or slice in a chart. If you are formatting a line, bar, or pie chart, you can choose a color and pattern for each Y-series or pie slice. If you are formatting a line chart, you can also specify a marker symbol to show where each data point is plotted. You can change a format by changing the options in the Data Format command's dialog box.

Colors, Patterns, and Markers

The Data Format command on the Format menu lets you specify colors, patterns, and markers. If you select Auto, Works will format the chart for you.

To change a color, a pattern, or a marker

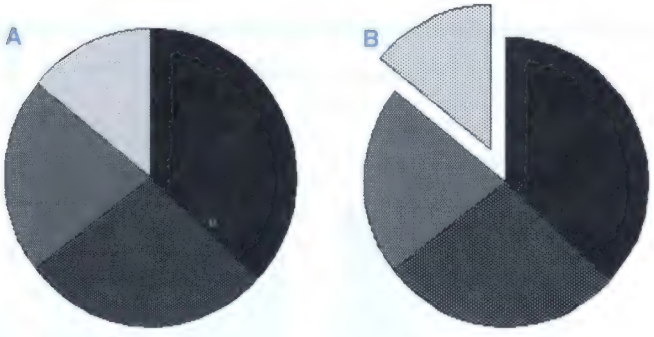
1. From the Format menu, choose Data Format.
2. In the Series list box, select a Y-Series. If you are formatting a pie chart, select a slice from the Slices list box.
3. From the corresponding list box, select a color, pattern, or marker.

   To let Works choose the colors, patterns, or markers for you, select Auto. If you do not want a color, pattern, or marker, select None.
4. To change the color, pattern, or marker for the selected Y-series or slice, choose the Format button.

   To change the color, pattern, or marker for all the line or bar Y-series or slices, choose the Format All button.

Note The Markers list box appears in the dialog box only if the active chart is a line chart, or if the active chart is a mixed line and bar chart and the selected series is a line series.

Exploding Pie Slices



A Unexploded slice
B Exploded slice

You can emphasize one or more slices in a pie chart by exploding (separating) a slice from the other slices. Initially, all pie slices are unexploded.

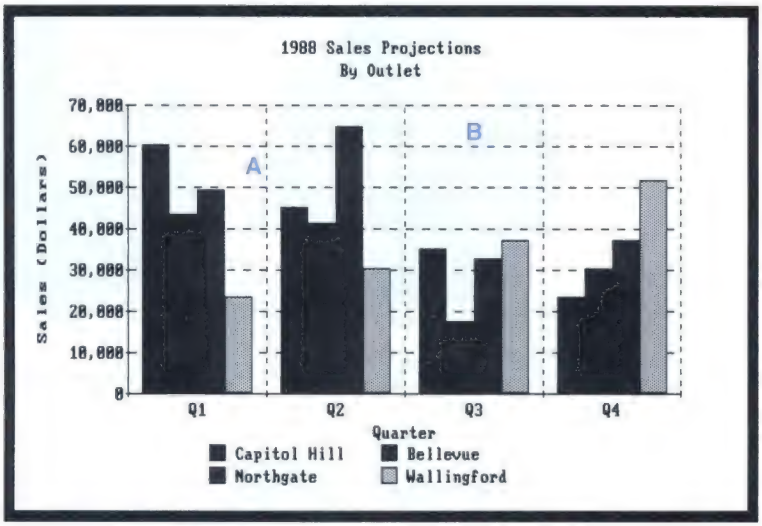
To explode or unexplode a pie slice

1. From the Format menu, choose Data Format.
2. In the Slices list box, select the slice to be exploded or unexploded.
3. Turn on the Exploded check box to explode the selected slice. Turn the check box off to unexplode it.
4. To explode the selected slice, choose the Format button.

   To explode all the slices, choose the Format All button.

For information on	See
Formatting specific types of charts	Data Format Command

Gridlines



A X-axis gridline
B Y-axis gridline

Gridlines, which run parallel to the X- and Y-axes, make the charted spreadsheet values easier to read. Y-axis gridlines extend horizontally from the Y-axis to distinguish between the intervals on the Y-axis scale. X-axis gridlines extend vertically from the X-axis to distinguish between categories in line and bar charts. In X-Y charts, X-axis gridlines distinguish between the intervals on the X-axis scale.

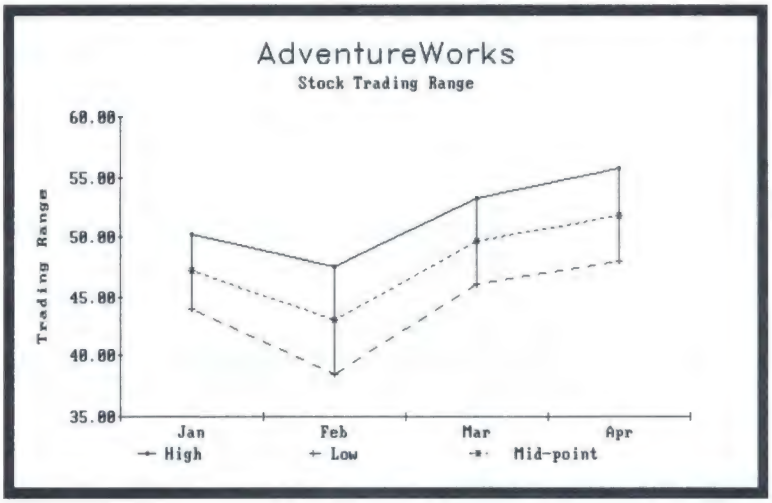
To turn gridlines on and off

1. From the Options menu, choose X-Axis or Y-Axis.
2. To show the gridlines, turn on the Grid Lines check box. To hide the gridlines, turn it off.
3. Press ENTER.

When you create a chart, the gridlines are initially turned off.

For information on	See
Determining the scale of the X- and Y-axes	Scale

Hi-Lo-Close Command (Format Menu)



The Hi-Lo-Close command changes the active chart to a hi-lo-close chart. A hi-lo-close chart emphasizes the range between the highest and lowest data point in each category by connecting the points with a vertical line. The stock market charts in your newspaper are often hi-lo-close charts.

To create a hi-lo-close chart you need at least two Y-series. Works automatically creates a hi-lo-close scale and chooses a color and pattern for the line and a marker for the data points.

To create a hi-lo-close chart

- From the Format menu, choose Hi-Lo-Close.

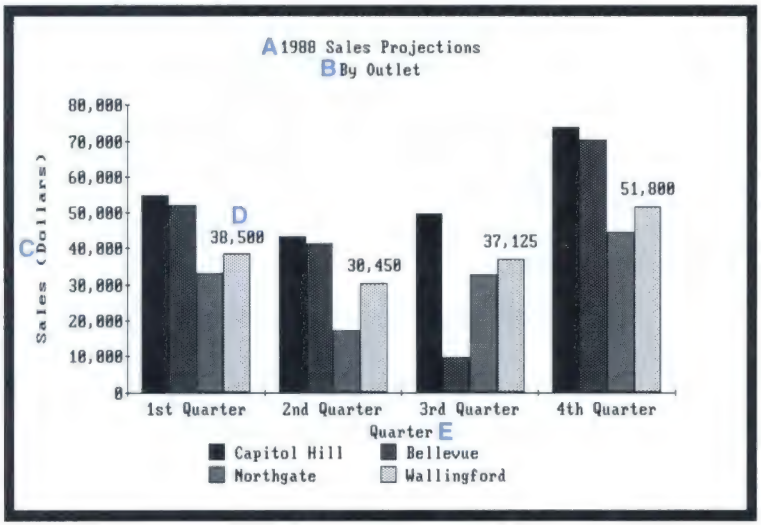
For information on	See
Changing the Y-axis scale	Scale
Titling charts and axes, and labeling data points	Labeling and Titling a Chart
Using patterns, colors, or markers	Formatting a Chart

Keyboard

You use the keyboard to move around and select items on the Chart screen the same way you do in the Spreadsheet screen.

For information on	See
Keyboard commands in the spreadsheet	Keyboard, in Chapter 6
Selecting	Selecting, in Chapter 6

Labeling and Titling a Chart



A Chart title
B Chart subtitle
C Y-axis title
D Data point label
E X-axis title

An effectively labeled and titled chart is easy to read and interpret. With Works you can:

- Create a title for a chart.
- Create titles for the X- and Y-axes.
- Label a Y-series or its individual data points.

Creating Chart and Axis Titles

The Titles command creates a title and a subtitle for a chart. It also creates a title for the X- and Y-axes in a bar, line, or X-Y chart.

To create chart and axis titles

You can use any text you want as a title. If the title resembles a cell reference, precede it with a double quotation mark ("). For example, to use C13 as a title, enter it as *"C13*.

1. From the Data menu, choose Titles.
2. In the Chart Title text box, type the chart title.
3. In the Subtitle text box, type the chart subtitle.
4. In the X-axis text box, type the X-axis title.
5. In the Y-axis text box, type the left Y-axis title.
6. If the chart has a right Y-axis, in the Right Y-axis text box type the right Y-axis title.
7. Press ENTER.

Note You can also use the value of a spreadsheet cell for a chart or axis title. Just type the reference of the cell in the appropriate text box instead of the actual title.

Labeling Data Points

The Data Labels command labels the data points (shown as markers or bars) in a Y-series in all charts except pie charts. (The labels for the slices in a pie chart are the same as their category names.) Using Data Labels, you can display the value next to each data point, or you can label the entire Y-series. Works uses the values in the spreadsheet range that you select to create labels.

To label a bar or a line

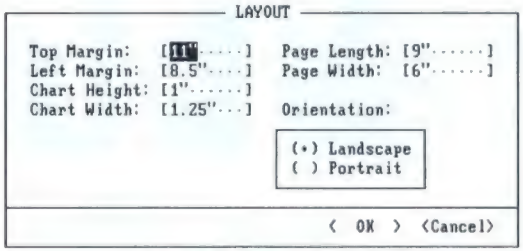
1. Select the range of cells containing the labels for the data points or the Y-series.
2. From the Data menu, choose Data Labels.
3. In the Series list box, select the Y-series to be labeled.
4. Choose the Create button.

For information on	See
Deleting titles or labels	Deleting
Labeling categories, creating legends	Creating a Chart

Layout Command (Print Menu)

The Layout command sizes and positions a chart on the page. You position a chart by specifying:

- The top and left margins.
- The size of the chart.
- The orientation of the chart (whether it prints across (portrait) or down (landscape) on the page).



Top Margin The distance in inches from the top of the page to the top of the print area. The default value is 1 inch.

Left Margin The distance in inches from the left side of the paper to the left of the print area. The default value is 3 inches.

Chart Height The height, in inches, that you want for the entire chart. The default value is 9 inches.

Chart Width The width, in inches, that you want for the entire chart. The default value is 6 inches.

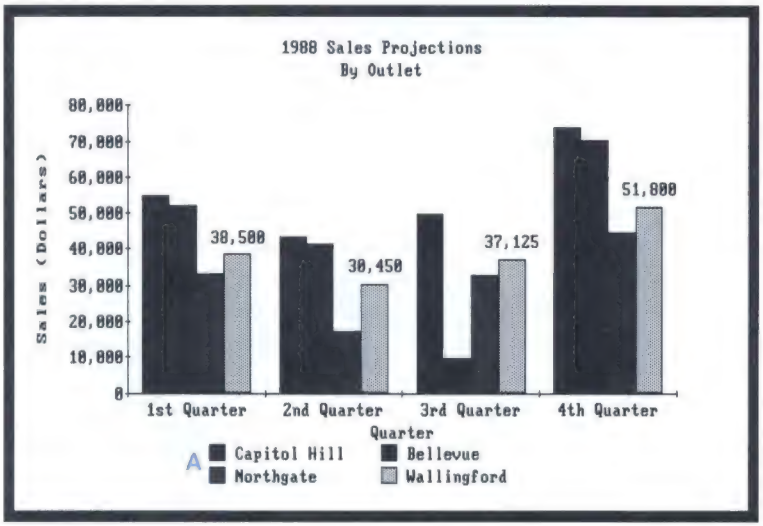
Page Length The length of the paper, in inches, on which the chart will be printed. The default value is 11 inches.

Page Width The width of the paper, in inches, on which the chart will be printed. The default value is 8.5 inches.

Orientation Portrait orientation prints the chart across the paper. Landscape orientation prints the chart down the paper. The default setting is Landscape.

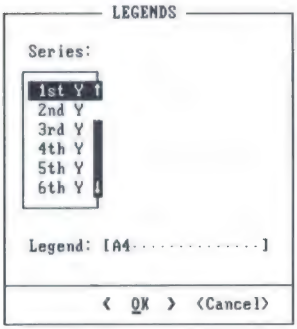
For information on	See
Positioning a chart on a page	Page Layout

Legends Command (Data Menu)



A Legends

The Legends command creates legends below the chart. A legend displays the marker, line, or pattern used to format a Y-series, with the name of the Y-series next to it.



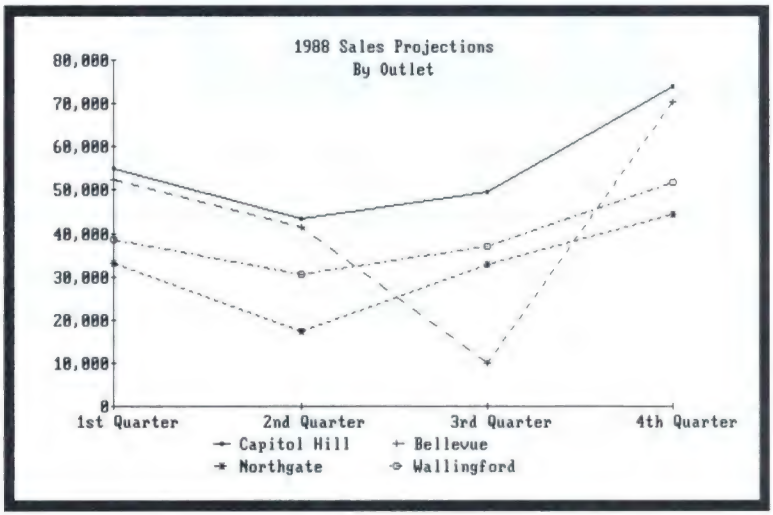
Series Lists the Y-series to be assigned a legend.

Legend Type the name or reference of a cell containing the name for the legend assigned to the selected Y-series. You can use any text you want as a

legend name. If the legend name resembles a cell reference, precede it with a double quotation mark ("). For example, to use C13 as a legend name, enter it as *"C13*.

For information on	See
Creating legends	Creating a Chart
Hiding or displaying legends	Show Legends Command

Line Command (Format Menu)



The Line command changes the active chart to a line chart. Each series is shown as a separate line.

When you create a line chart, Works automatically creates a normal Y-axis and chooses a color, pattern, and marker for displaying each Y-series and its data points.

To create a line chart

▣ From the Format menu, choose Line.

For information on	See
Changing the Y-axis scale	Scale
Creating a second Y-axis	Two Y-Axis Command
Line charts that show numeric size and grand totals for each category	Area Line Command
Using patterns, colors, or markers	Data Format Command
Titling charts and axes, and labeling data points	Labeling and Titling a Chart

List Printer Formats Command (Options Menu)

The List Printer Formats command determines whether the list boxes in the Format menu's Data command show the formats that are available for your screen or your printer.

If the command is unchecked, the Format Data command's list boxes show the formats that are available for your screen. If the command is checked, the Format Data command's list boxes show the formats that are available for your printer.

To switch between screen and printer formats

▣ From the Options menu, choose List Printer Formats.

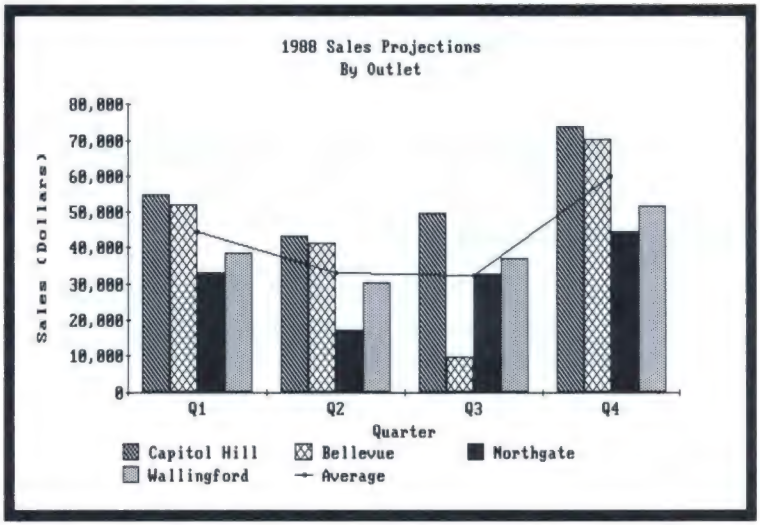
For information on	See
Using formats	Formatting a Chart Data Format Command

Markers

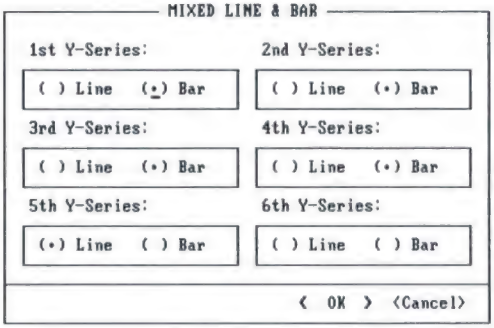
Markers are symbols that you can use in line and X-Y charts to distinguish between the individual data points in a Y-series.

For information on	See
Changing markers in line and X-Y charts	Formatting a Chart

Mixed Line & Bar Command (Options Menu)



The Mixed Line & Bar command creates a unique chart that contains both lines and bars. With this command, you tell Works which Y-series you want displayed as lines and which Y-series you want displayed as bars.



Line, Bar Each Y-series can be either a line or a bar.

To specify a bar or a line for a Y-series

1. From the Options menu, choose Mixed Line & Bar.
2. Under each Y-series, specify whether you want to show a line or bar in the chart.
3. Press ENTER.

After creating a mixed line and bar chart, you may want to create a chart that contains only lines or bars without changing the current Y-axis scale.

To create a chart with only lines or bars

1. From the Options menu, choose the Mixed Line & Bar command.
2. Under each Y-series, select either line or bar.
3. Press ENTER.

Naming a Chart

When you create a new chart, Works automatically assigns it a name. The first chart you create has the name Chart1, the second chart you create has the name Chart2, and so on. You can give each chart a descriptive name so that it is easier to identify on the Chart menu or in the Charts dialog box. The chart name does not actually appear in the chart. You can name a chart from either the Spreadsheet screen or the Chart screen.

To name or rename a chart

1. From the Chart menu, choose Charts.
2. In the Charts list box, select the chart you want to name.
3. In the Name text box, type the new name.
4. Choose the Rename button.

Note If you want the name of the chart to appear in the chart, you need to use the Titles command to assign the chart a title. See "Titles Command" in this chapter for more information.

For information on	See
Titling charts and axes, and labeling data points	Labeling and Titling a Chart

New Command (Chart Menu)

The New command creates a new chart. If you select a range and choose New from the Chart menu in either the Spreadsheet screen or the Chart screen, Works uses speed charting to create the Y-series, the X-series (categories), and the legends. If a single cell is selected when you choose New, Works creates a new chart but does not define anything. The new chart becomes the active chart.

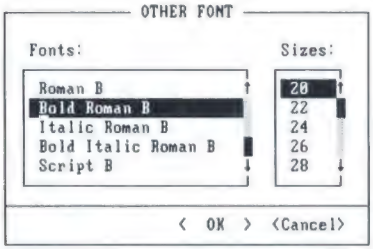
To create a new chart

- From the Chart menu, choose New.

For information on	See
Copying existing charts	Copying a Chart
Speed charting	Creating a Chart

Other Font Command (Print Menu)

The Other Font command lets you specify the font and font size for the axis titles, data point labels, scale, and legends in your chart.



Fonts You can select a font for all the text in your chart except the title. The list box shows the fonts Works can produce on the printer you specified in the Setup program.

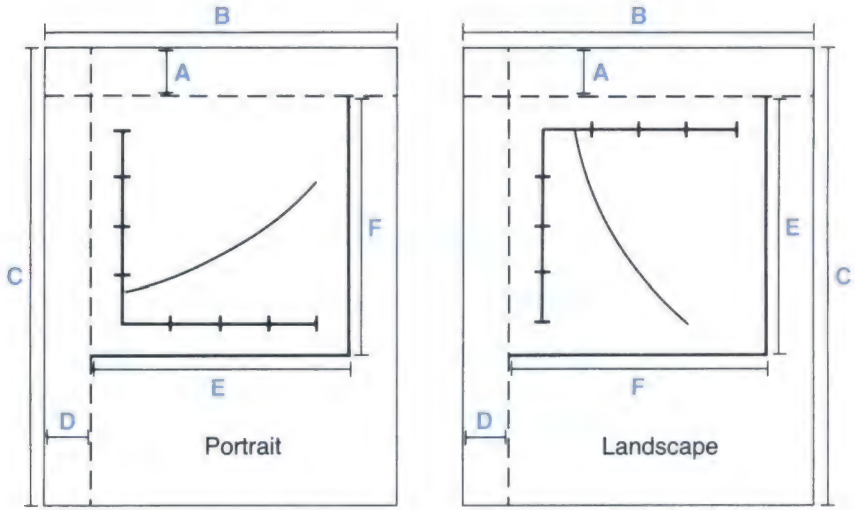
Sizes The list box shows the font sizes that Works can produce on your printer for the selected font.

To choose a font for the subtitle, axis titles, legends, and data point labels

1. From the Print menu, choose Other Font.
2. In the Fonts list box, select a font for the subtitle, axis titles, data labels, and legends.
3. In the Sizes list box, select a font size for the selected font.
4. Press ENTER.

For information on	See
Choosing a font for the chart title	Title Font Command
Displaying screen or printer fonts	Show Printer Fonts Command

Page Layout



A Top margin
B Page width
C Page length
D Left margin
E Chart width
F Chart height

The Layout command sizes and positions the chart on the page. You use Layout to specify:

- The top and left margins.
- The height and width of the chart.
- The page length and width.
- The orientation of the chart (whether it prints across or down on the page).

To position a chart on the page

1. From the Print menu, choose Layout.
2. In the appropriate text boxes, type the margins, page dimensions, and chart dimensions.

3 Under Orientation, select Landscape or Portrait.

4 Press ENTER.

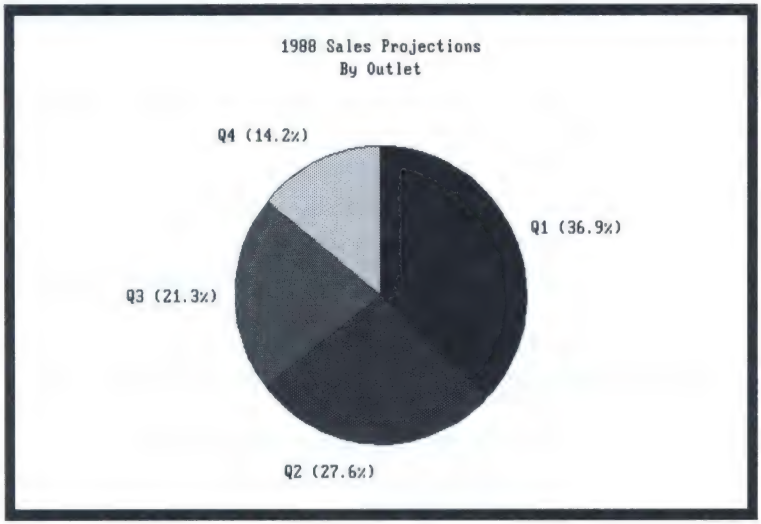
For information on	See
The Layout dialog box	Layout Command

Patterns

You use patterns in bar and line charts to distinguish the bars or lines in the different Y-series in each category. In pie charts, you use patterns to distinguish the different slices (categories) in the pie.

For information on	See
Changing patterns in pie charts, line charts, and bar charts	Formatting a Chart

Pie Command (Format Menu)



The Pie command changes the active chart to a pie chart.

Works uses only the first Y-series in a pie chart. A pie chart is a circle divided into slices. A slice represents the percentage that a data point contributes to the Y-series total.

When you create a pie chart, Works labels each slice with a percentage value and its category name (if you've defined an X-series).

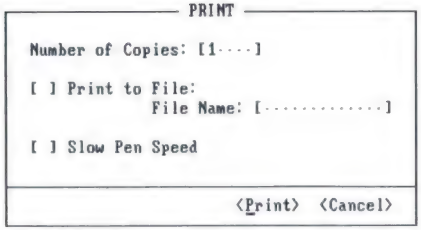
To create a pie chart

1. Assign the range whose points you want to chart to 1st Y-Series.
2. From the Format menu, choose Pie.

For information on	See
Comparing data point percentages between several Y-series	100% Bar Command
Exploding slices	Formatting a Chart
Using patterns and colors in a pie chart	Formatting a Chart

Print Command (Print Menu)

The Print command prints the active chart or copies it to a disk file. You can print charts from the Chart screen, or from the Spreadsheet screen using the Print menu's Print Chart command. You can also copy a chart to a Works Word Processor file. For more information on copying files, see Chapter 16, "Exchanging Information Between Tools."



Number of Copies The number of copies of the chart that you want to print.

Print to File Turn on the Print to File check box to copy your chart to a disk file. Turn it off to print your chart to a printer.

File Name The name of the disk file where you want to print the chart.

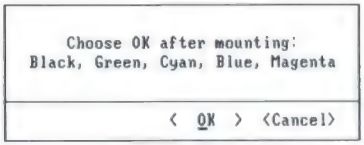
Slow Pen Speed Turn on the check box to use a slower pen speed that produces higher-quality charts. Turn off the check box to print draft-quality charts using a faster pen speed.

To print a chart

1. From the Print menu, choose Print.
2. In the Number of Copies text box, type the number of copies you want to print.
3. If you want to copy the chart to a disk file, turn on the Print to File check box and type the file name in the File Name text box.
4. Press ENTER.

Printing a Chart on a Plotter

If you are printing a chart with several colors on a plotter, the following dialog box appears.



Choose OK after mounting Be sure that the pens corresponding to the colors in the list box are mounted on the plotter.

To print a chart on a plotter

1. From the Print menu, choose Print.
2. Mount the pens corresponding to the colors in the list box.
3. Press ENTER.

If your chart has more colors than the plotter can hold at one time, a dialog box will reappear after Works has used all the pens mounted on your plotter. In this case, you need to mount the next set of pens listed in the dialog box and then select the OK button to continue printing.

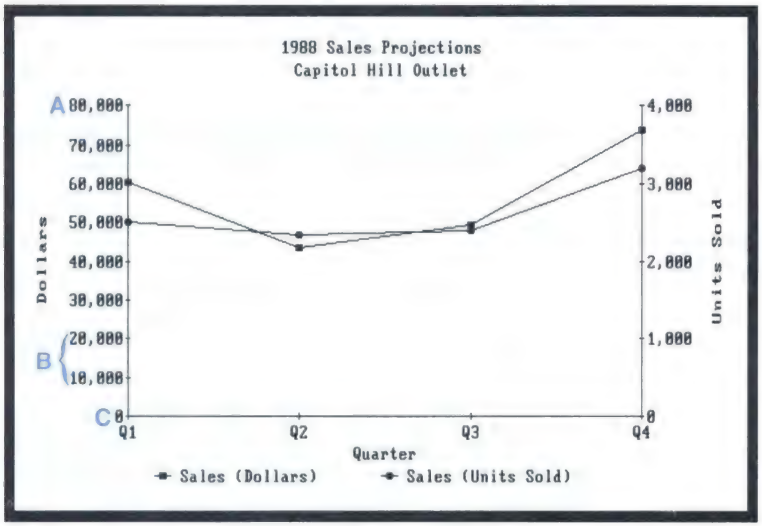
For information on	See
Positioning a chart on the page	Page Layout

Right Y-Axis Command (Options Menu)

The Right Y-Axis command determines the scale and type of the right Y-axis. The dialog box for this command is identical to the dialog box for the Y-Axis command on the Options menu and behaves in the same way. For information on creating and deleting the right Y-axis, see "Two Y-Axes Command," in this chapter.

For information on	See
Changing the right Y-axis scale	Scale
The Right Y-Axis dialog box	Y-Axis Command

Scale



A Maximum value
B Interval
C Minimum value

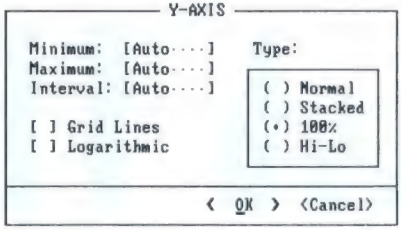
Works uses the scale along the Y-axis to measure the Y-series. In X-Y charts, Works uses the scale along the X-axis to measure the X-series, and the X-axis behaves just like the Y-axis.

A scale is defined by a minimum value, a maximum value, and an interval.

- The **minimum value** is the lowest number on the scale. Works will not display a portion of the chart lower than the minimum value.
- The **maximum value** is the highest number on the scale. Works will not display a portion of the chart higher than the maximum value.
- The **interval** is the distance between the scale numbers.

When you create a chart, Works automatically determines the minimum value, the maximum value, and the interval for all of the data in your chart. If you change the data in the spreadsheet, Works readjusts the scale values and the interval to fit the new data. You can also define the entire scale yourself to emphasize a specific range of values, and to chart points in smaller or larger increments.

Changing the Y-Axis Scale



Initially, all the items in the Y-Axis dialog box are set to Auto, allowing Works to define the scale for you and adjust it for data changes. You can specify your own values for Minimum, Maximum, or Interval, or you can specify some of the values and then let Works choose the rest.

To change the Y-axis scale

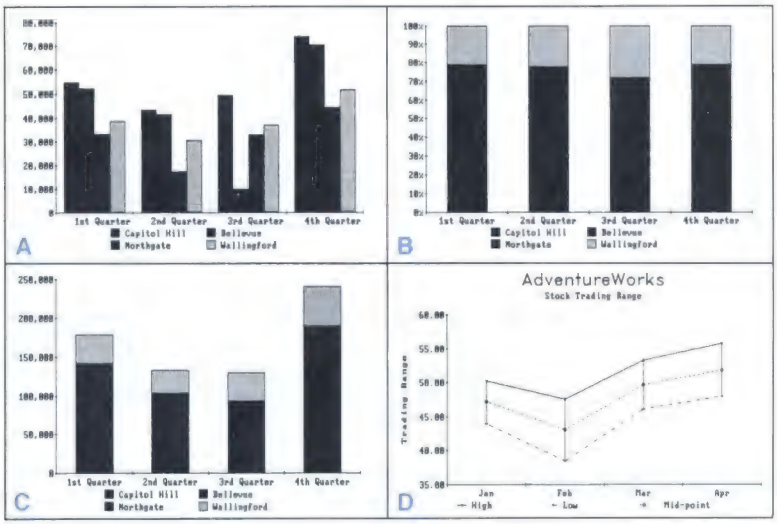
1. From the Options menu, choose Y-Axis.
2. In the Minimum text box, type the lowest number you want on the Y-axis scale.
3. In the Maximum text box, type the highest number you want on the Y-axis scale.
4. In the Interval text box, type the amount you want to skip between each number on the scale.
5. Press ENTER.

Note If the active chart is a 100% bar chart, Works ignores any adjustments that you make to the Y-axis scale.

Changing the X-Axis Scale in X-Y Charts

If the active chart is an X-Y chart, you can use the X-Axis command to define the X-axis scale yourself, or you can let Works define it for you. You do this the same way you define the Y-axis scale, described in the preceding section.

Using Scale Types



A Normal
B 100%
C Stacked
D Hi-Lo

You can choose one of four scale types. The scale type controls how Works measures the charted information.

Normal Works uses normal scaling unless you choose another type. Y-series are charted against the Y-axis according to their numeric value.

100% 100% scaling creates an axis that shows percentages from 0 to 100%, rather than numeric values. A 100% bar chart has a 100% scale. Use 100% scaling when you want to compare the percentage of each data point in a Y-series.

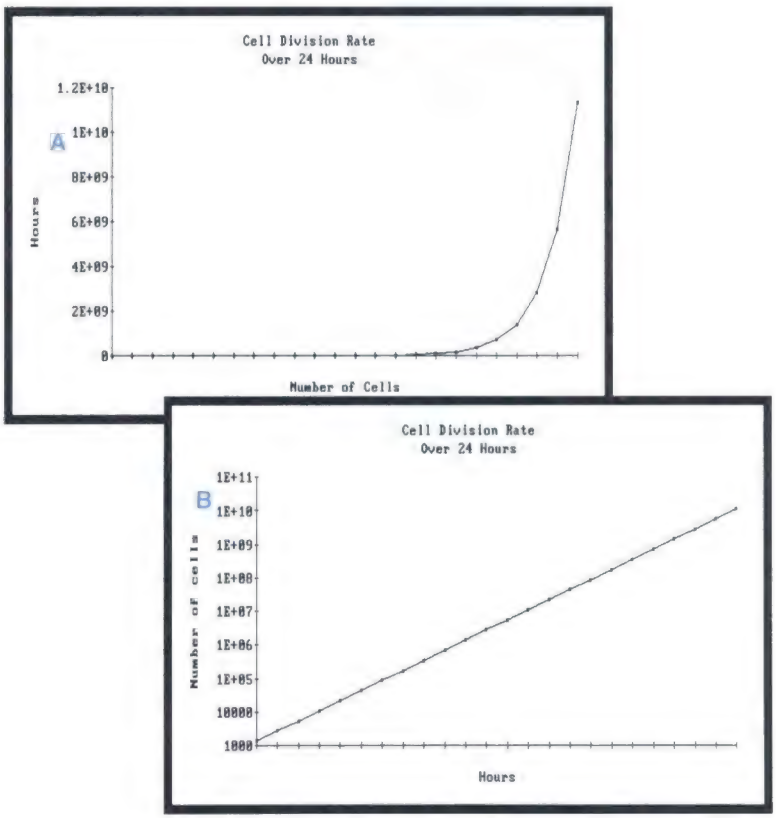
Stacked Stacked scaling adjusts the axis to show the total value of the largest category. Stacked bar charts and area line charts have a stacked scale. Use stacked scaling to emphasize the numeric size of each series in relation to all the series in a category.

Hi-Lo Hi-Lo scaling creates a chart similar to a hi-lo-close chart. Works uses normal scaling and draws vertical lines between the lowest and highest value in each category to emphasize the range between them.

To change the scale type

1. From the Options menu, choose Y-Axis.
2. Under Type, select an option.
3. Press ENTER.

Using Logarithmic Scaling



A Linear scale
B Logarithmic scale

The Logarithmic check box in the Y-Axis command's dialog box (and the X-Axis command's dialog box, if the active chart is an X-Y chart) converts the linear scale to a logarithmic scale. Logarithmic scale values and intervals are always powers of 10, such as 0.1, 1, 10, 100, and 1000. Logarithmic scaling is useful for charting Y-series that have broad numeric ranges, such as values that grow at an exponential rate.

To turn logarithmic scaling on or off

1. From the Options menu, choose Y-Axis to change the Y-axis scaling, or X-Axis to change the X-axis scaling.
2. Turn on the Logarithmic check box to show logarithmic scaling. Turn it off to show linear scaling.
3. Press ENTER.

For information on	See
Using gridlines	Gridlines

Select Chart Printer Command (Print Menu)

The Select Chart Printer command lets you specify which printer you want to print your chart on.

For information on	See
Selecting a printer	Chapter 2, "Using Basic Skills"

Selecting

You select cells and ranges the same way in both the Spreadsheet screen and the Chart screen. You can also use commands from the Data menu on the Chart screen to select the range of spreadsheet cells assigned to a Y-series, an X-series, or data point labels in order to edit or view their values.

To select a Y-series or X-series range

1. From the Data menu, choose Series.
2. In the Series list box, select the series you want to edit or view.
3. Choose the Go To button.

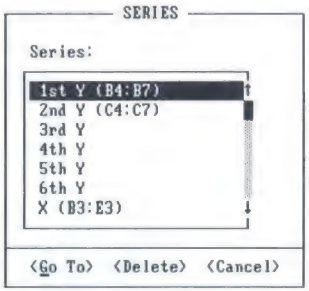
To select a data point label range

1. From the Data menu, choose Data Labels.
2. In the Series list box, select the series whose data point labels you want to edit or view.
3. Choose the Go To button.

For information on	See
Selecting cells and ranges	Selecting, in Chapter 6

Series Command (Data Menu)

The Series command selects the range assigned to a Y-series, or deletes a Y-series from the chart.



Series Lists the Y-series you want to delete or go to.

Go To The Go To button selects the range assigned to the selected Y-series.

Delete The Delete button deletes the selected Y-series from the chart.

For information on	See
Deleting a Y-series from a chart	Deleting Y-Series Command
Selecting a spreadsheet range assigned to a Y-series	Selecting

Show Border Command (Options Menu)

The Show Border command draws a border around a chart. A mark beside the command means the command is on and a border will be shown.

To turn the border on or off

▣ From the Options menu, choose Show Border.

Show Legends Command (Options Menu)

The Show Legends command lets you hide or display the legends in your chart. When this command is on, a mark appears next to it, and Works displays the legends across the bottom of the chart. When this command is off, the legends are not changed in any way; they just don't appear in the chart.

To hide or display a legend

▣ From the Options menu, choose Show Legends.

For information on	See
Creating legends	Creating a Chart

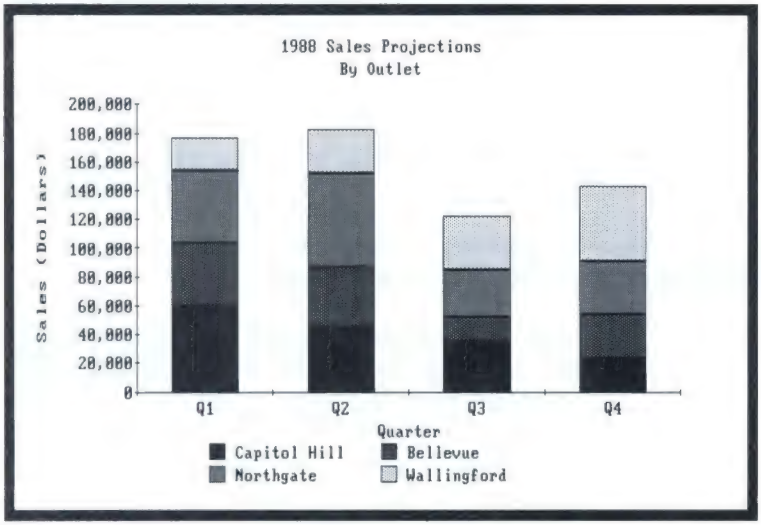
Show Printer Fonts Command (Options Menu)

The Show Printer Fonts command lets you specify how text is displayed in a chart. When this command is on, a mark appears next to it, and Works displays text in the chart as it will look when the chart is printed. When this command is off, Works displays text in the screen font.

To turn the printer font on and off

▣ From the Options menu, choose Show Printer Fonts.

Stacked Bar Command (Format Menu)



The Stacked Bar command changes the active chart to a stacked bar chart. In a stacked bar chart, the data points in each category are stacked from bottom to top, starting with the first Y-series. Use stacked bar charts if you want to compare each data point to the grand total for each category.

In a stacked bar chart, all the numbers in each Y-series should be greater than 0. When you create a stacked bar chart, Works automatically creates a stacked Y-axis scale and chooses a color and pattern for the bars.

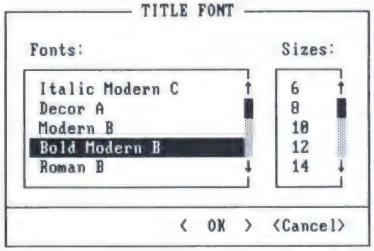
To create a stacked bar chart

- From the Format menu, choose Stacked Bar.

For information on	See
Bar chart comparing numeric size of each category	Bar Command
Bar chart showing the percentage contribution of each Y-series to the total of each category	100% Bar Command

Title Font Command (Print Menu)

The Title Font command lets you specify one font and font size for the chart title.



Fonts The list box shows all of the fonts Works can produce on your printer for the chart title.

Sizes The list box shows all of the font sizes Works can produce on your printer for the chart title.

To choose a font for the chart title

1. From the Print menu, choose Title Font.
2. In the Fonts list box, select a font for the chart title.
3. In the Sizes list box, select a font size for the chart title.
4. Press ENTER.

For information on	See
Choosing a font for the rest of the text in a chart	Other Font Command
Displaying the printer or screen fonts	Show Printer Fonts Command

Titles Command (Data Menu)

The Titles command creates a title for a chart and a title for each axis. Each title can be up to 40 characters long.

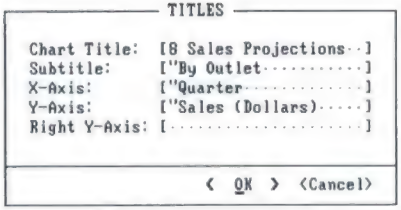


Chart Title You can type a title for your chart, or the reference of a cell containing the chart title. Works centers the chart title above the chart.

Subtitle You can type a subtitle for your chart title, or the reference of a cell containing the chart subtitle. Works centers the subtitle below the chart title.

X-Axis You can type a name, or the reference of a cell containing a name, to describe what the X-axis represents. Works centers the X-axis title below the X-axis.

Y-Axis You can type a name, or the reference of a cell containing a name, to describe what the Y-axis represents. Works centers the Y-axis title to the left of the Y-axis.

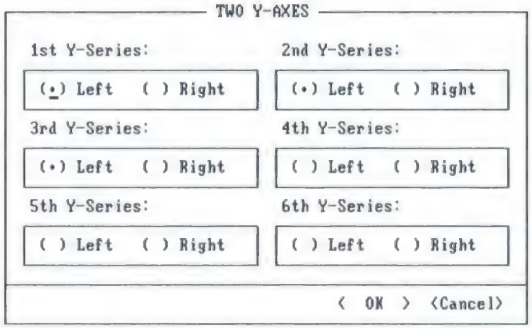
Right Y-Axis You can type a name, or the reference of a cell containing a name, to describe what the right Y-axis represents. Works centers the right Y-axis title to the right of the right Y-axis whenever two Y-axes are shown.

For information on	See
Creating chart and axis titles, and labeling data points	Labeling and Titling a Chart
Right Y-axis	Two Y-Axes command

Two Y-Axes Command (Options Menu)

The Two Y-Axes command creates a right Y-axis for the active chart. Use this command to present the charted information on two different scales.

When you create a chart, Works automatically assigns each Y-series to the left Y-axis and does not create a right Y-axis. To create a right Y-axis, you need to assign at least one Y-series to it.



To create a right Y-axis

Assign at least one Y-series as a right Y-axis.

1. From the Options menu, choose Two Y-Axes.
2. Under Y-Series, assign each Y-series to the left or right Y-axis.
3. Press ENTER.

To remove the right Y-axis

1. From the Options menu, choose Two Y-Axes.
2. Under Y-Series, assign all Y-series to the left Y-axis.
3. Press ENTER.

For information on	See
Changing the Y-axis scale	Scale
Using gridlines	Gridlines
Y-axis dialog box options	Y-Axis Command

View Command (Chart Menu)

Shortcut Key: SHIFT + F10

The View command lets you view the active chart. You can also look at the active chart by pressing SHIFT + F10. You can view a chart from either the Spreadsheet screen or the Chart screen.

To view a chart

- From the Chart menu, choose View.
  You can also press SHIFT+F10.

To leave the chart view

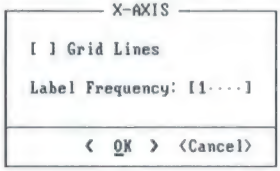
- Press any key.

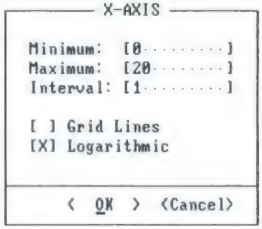
X-Axis Command (Options Menu)

The X-Axis command behaves in two different ways, depending on the active chart type.

If the active chart is a line or bar chart, the X-Axis command turns X-axis gridlines on and off, and controls how many categories are skipped before the next category is displayed.

If the active chart is an X-Y chart, the X-Axis command defines the scale for measuring the data points in a Y-series against the X-axis. It also lets you turn the X-axis gridlines on and off, and switch between logarithmic and linear scaling. For more information on X-Y charts, see "X-Y Command" in this chapter.





Grid Lines If the check box is turned on, X-axis gridlines are displayed in the chart. If the check box is turned off, gridlines are not displayed.

Label Frequency The number of categories you want to skip before displaying the next category. Use this option whenever categories are so long that they overlap along the X-axis.

Minimum The lowest number you want to see at the left end of the axis. If you want Works to determine the number for you, type *A* or *Auto*.

Maximum The highest number you want to see at the right end of the axis. If you want Works to determine the number for you, type *A* or *Auto*.

Interval The size of the interval you want between numbers on the scale. For example, type *20* if you want the scale to count by 20's.

Logarithmic If the check box is turned on, the X-axis converts to logarithmic scaling. If the check box is turned off, it returns to linear scaling.

For information on	See
Categories and axes	Axes Creating a Chart
Using gridlines	Gridlines
Using logarithmic scales	Scale
Y-axes	Axes Two Y-Axes Command Y-Axis Command

X-Series Command (Data Menu)

The X-Series command labels each category along the X-axis, or each pie slice, with the contents of the selected cells.

Most of the time, the range you chart will be a single row or column. Works can also create a Y-series from information in multiple rows or columns. Works charts the information in consecutive order, from the top to the bottom of each column, beginning at the leftmost column and moving right.

To create the X-series

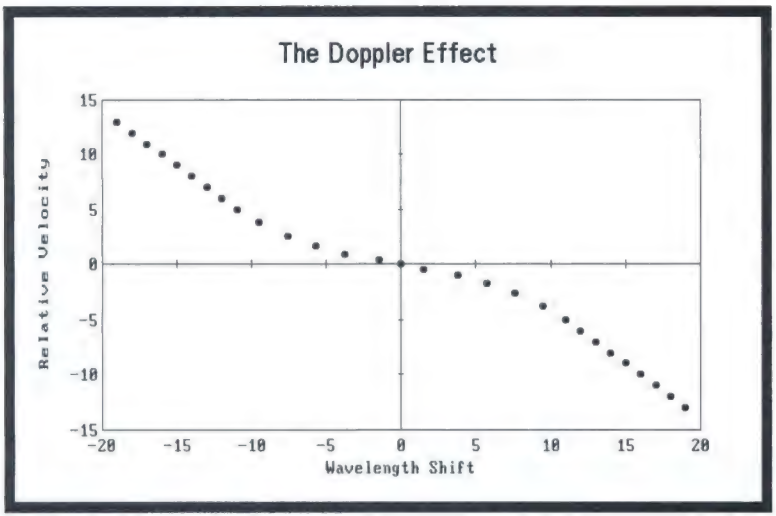
1. Select the cells whose contents you want to use to label the categories.
2. From the Data menu, choose X-Series.

To delete the X-series

1. From the Data menu, choose Series.
2. In the Series list box, select X-Series.
3. Choose the Delete button.

For information on	See
Displaying categories that overlap	Creating a Chart

X-Y Command (Format Menu)



The X-Y command creates an X-Y chart (also called a scatter chart). Unlike other charts, the categories in X-Y charts have the same numerical significance as the data points in a Y-series. An X-Y chart helps you to analyze the numerical relationship between values in the Y-series and values in the X-series.

Works uses the X-series numbers to create the X-axis scale, and the Y-series numbers to create the Y-axis scale. For X-Y charts, Works creates an X-axis that is similar to the Y-axis. The X-axis has a minimum value, a maximum value, and an interval, and can display gridlines and a logarithmic scale.

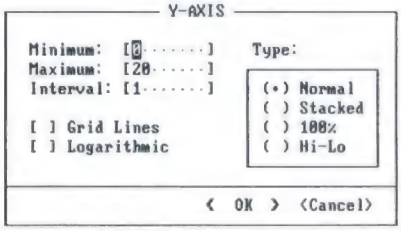
When you select a series of numbers to assign to the X-series, the numbers don't have to be in order or evenly spaced. Works automatically orders and positions the numbers in the X-series along the X-axis scale according to their values. When Works creates the chart, it places markers in the positions determined by each X- and Y-series pair.

To create an X-Y chart

- From the Format menu, choose X-Y.

Y-Axis Command (Options Menu)

The Y-Axis command defines the scale and type of the left Y-axis, and the right Y-axis if your chart has one. Y-Axis also lets you turn Y-axis gridlines on and off, and switch between logarithmic and linear scaling.



Minimum The lowest number you want to see at the bottom of the axis. If you want Works to determine the number for you, type *A* or *Auto*.

Maximum The highest number you want to see at the top of the axis. If you want Works to determine the number for you, type *A* or *Auto*.

Interval The size of the interval you want between numbers on the scale. For example, type *20* if you want the scale to count by 20's.

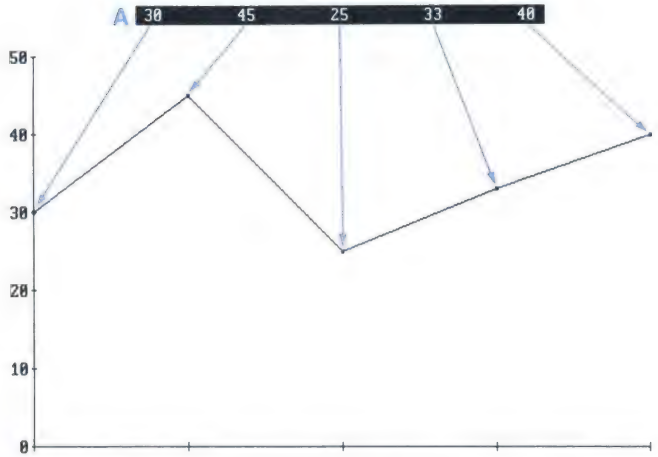
Type The selected option button shows the active scale type. Select another scale type to change the Y-axis to the new scale type. See the "Scale" topic in this chapter for a detailed description of each scale type. Works charts the Y-series against the Y-axis according to their numeric values.

Grid Lines If the check box is turned on, Y-axis gridlines are displayed in the chart. If the check box is turned off, gridlines are not displayed.

Logarithmic If the check box is turned on, the Y-axis scale converts to logarithmic scaling. If the check box is turned off, the Y-axis scale returns to linear scaling.

For information on	See
Creating or deleting the right Y-axis	Two Y-Axes Command
Setting the Y-axis scale	Scale
Using gridlines	Gridlines
X-axis	X-Axis Command

Y-Series



A A range is shown as a Y-series.

Works uses Y-series to create charts from the information in a spreadsheet. You assign a series of numbers from the spreadsheet to a Y-series, and Works charts the Y-series as points, bars, or pie slices in a chart. Works can chart up to six Y-series.

To create a Y-series

1. Select the range containing the series of numbers that you want to chart.
2. From the Data menu, choose 1st Y-Series.

Repeat the procedure for each range you select. Assign the second range you select to the second Y-Series, the third range you select to the third Y-Series, and so on.

To delete a Y-series from a chart

1. From the Data menu, choose Series.
2. In the Series list box, select the Y-series you want to delete.
3. Choose the Delete button.

To assign a Y-series to the left or right axis

1. From the Options menu, choose Two Y-Axes.
2. Under Y-Series, select the appropriate Left or Right option for each Y-series.
3. Press ENTER.

For information on	See
Changing the Y-axis scale	Scale
Creating a title for the Y-axis	Labeling and Titling a Chart
Letting Works create Y-series for you	Creating a Chart

The Database

Welcome to the Database. The Database automates your filing system, letting you organize and file all your records. With your information stored in the Database, you'll have quick access to any of your records. If you want a list of sales leads in Cincinnati, or restaurant names that begin with "S" in Buffalo, just ask the Database. It can do calculations using information already in your database.

A report presents database records grouped and sorted in a document, complete with summarizing statistics and explanatory text. From the same set of information, you can print many different reports. Each report will contain just the particular information you want to pull from the Database.

This part of the manual explains how to create and use Database files:

- Chapter 10, "Introduction to the Database," teaches fundamental database concepts and shows you how to create a database.
- Chapter 11, "Database Reference," is an alphabetically arranged reference on using the Database.
- Chapter 12, "Introduction to Reporting," teaches fundamental reporting concepts and how to create a report.
- Chapter 13, "Reporting Reference," is an alphabetically arranged reference on using Reporting.

10 Introduction to the Database

With the Database's many commands, you can quickly access just the information you want, and then print it in a report.

The best way to learn how to use the Database is to use the computer-based tutorial, Learning Microsoft Works. It offers several lessons on basic database concepts and how to create a database.

In this chapter you will learn about databases and how to create them. There are several topics:

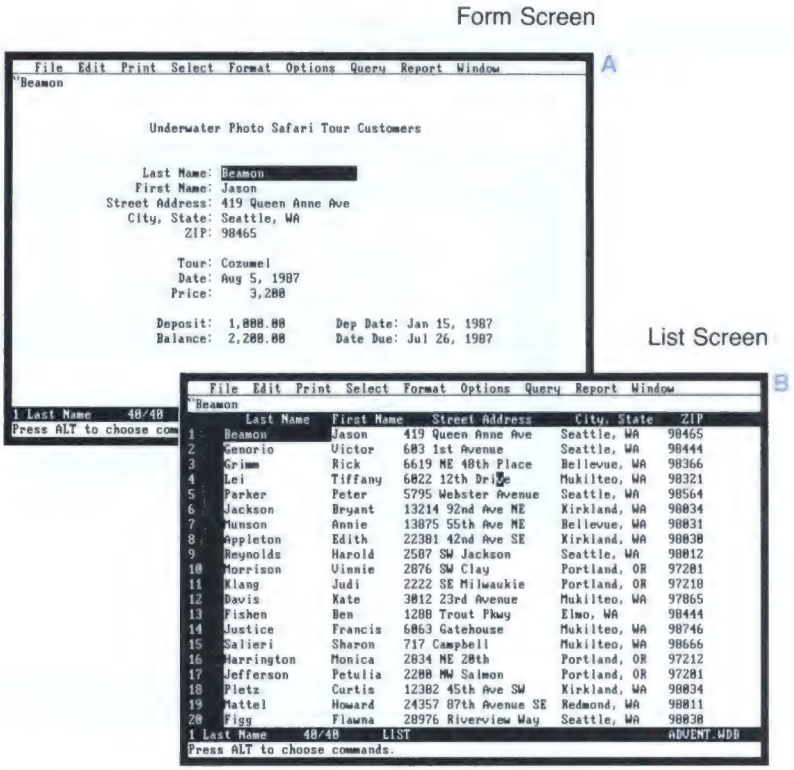
- Looking at a database
- The formula bar and the active cell
- Numbers, field formulas, and text
- Creating a database
- Entering and editing
- Querying the database
- Sorting records
- Printing

Looking at a Database

The Database organizes information into records, cells, and fields. A record is made up of specific pieces of information that together comprise one database entry. For example, one record may hold the name, age, and phone number for John Smith. A database can have up to 4096 records.

Cells hold the pieces of information in a record. Each cell can hold one piece of information, such as a name, age, or phone number. Each record can have up to 256 cells.

A field is a group of cells that hold the same type of information and share the same field name. For example, a field named "Age" is made up of all cells in the database specifying ages.

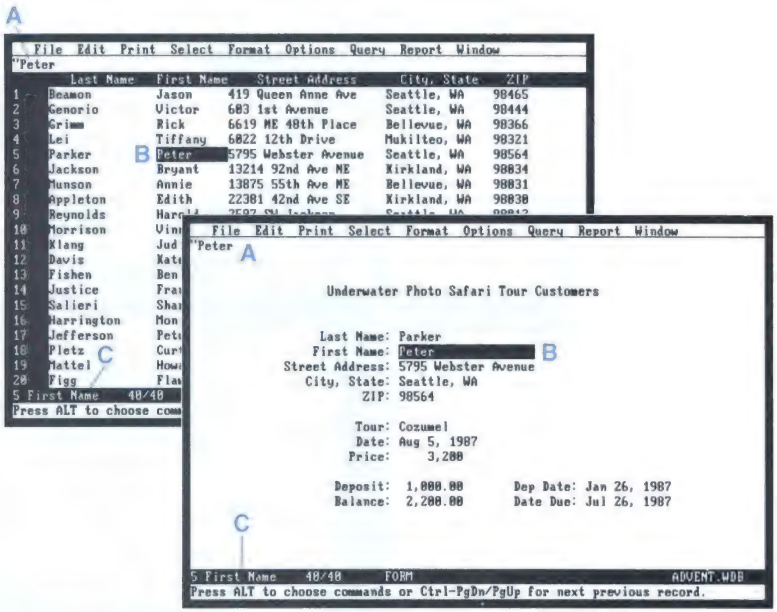

Form Screen
File Edit Print Select Format Options Query Report Window
"Beamon
Underwater Photo Safari Tour Customers
Last Name: Beamon
First Name: Jason
Street Address: 419 Queen Anne Ave
City, State: Seattle, WA
ZIP: 98465
Tour: Cozumel
Date: Aug 5, 1987
Price: 3,200
Deposit: 1,000.00
Dep Date: Jan 15, 1987
Balance: 2,200.00
Date Due: Jul 26, 1987
A
List Screen
File Edit Print Select Format Options Query Report Window
"Beamon
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 603 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6022 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98030
9 Reynolds Harold 2587 SW Jackson Seattle, WA 98012
10 Morrison Vinnie 2876 SW Clay Portland, OR 97201
11 Klang Judi 2222 SE Milwaukie Portland, OR 97210
12 Davis Kate 3012 23rd Avenue Mukilteo, WA 97865
13 Fishen Ben 1200 Trout Pkwy Elmo, WA 98444
14 Justice Francis 6063 Gatehouse Mukilteo, WA 98746
15 Salieri Sharon 717 Campbell Mukilteo, WA 98666
16 Harrington Monica 2834 NE 28th Portland, OR 97212
17 Jefferson Petulia 2200 NW Salmon Portland, OR 97201
18 Pletz Curtis 12302 45th Ave SW Kirkland, WA 98034
19 Mattel Howard 24357 87th Avenue SE Redmond, WA 98011
20 Figg Flawna 20976 Riverview Way Seattle, WA 98030
1 Last Name 40/40 LIST ADVENT.WDB
Press ALT to choose commands.
B

A The Form screen, like a printed form, shows one record at a time.
B The List screen shows several records arranged in columns and rows.

Works lets you look at the records, cells, and fields in two ways: on the List screen or on the Form screen. The List screen organizes cells into fields (columns) and records (rows). With the List screen, you can see information from many different records on one screen at the same time.

Works lets you organize cells so they look like printed forms by using the Form Design screen. You can arrange cells and explanatory text, called labels, on this screen to create a form. Once a form is created, you can switch to the Form screen to enter and display information, one record at a time.

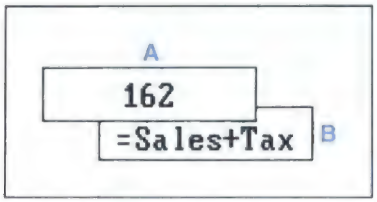
The Formula Bar and the Active Cell


A
File Edit Print Select Format Options Query Report Window
"Peter
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 683 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6822 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98834
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98831
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98838
B
C
5 First Name 40/40
Press ALT to choose com
File Edit Print Select Format Options Query Report Window
"Peter
A
Underwater Photo Safari Tour Customers
Last Name: Parker
First Name: Peter
Street Address: 5795 Webster Avenue
City, State: Seattle, WA
ZIP: 98564
Tour: Cozumel
Date: Aug 5, 1987
Price: 3,200
Deposit: 1,000.00 Dep Date: Jan 26, 1987
Balance: 2,200.00 Date Due: Jul 26, 1987
B
C
5 First Name 40/40 FORM ADVENT.WDB
Press ALT to choose commands or Ctrl-PgDn/PgUp for next previous record.

A Contents of the active cell
B Active cell
C Field and record location of the active cell

You use the formula bar to enter text, numbers, and field formulas into the database and also to edit them. Whatever you type into the database is first displayed in the formula bar. When you press ENTER, Works places your entry in the active cell.

The active cell is the cell covered by the highlight; it is the cell you are working with. If you want to make another cell the active cell, use the DIRECTION keys to move the highlight to that cell. As you move the highlight, the formula bar changes to display each successive cell's contents.



A Value of applied formula in cell
B Formula that appears in formula bar

Numbers, Field Formulas, and Text

You can enter a number, text, or a field formula into a cell.

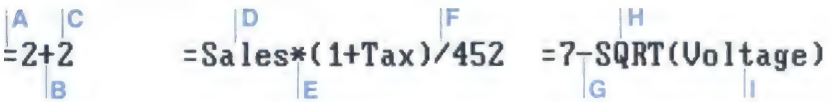
Numbers

A number expresses a quantity. You can enter numbers into the formula bar in many ways.

Enter	Like this
Integers	789, −789
Decimal fractions	7.89, 0.789, −.789
Exponential numbers	7.89E2, 789E−12
Fractions or stock prices	10 3/4
Percentages	8%

Field Formulas

A field formula is an equation Works uses to calculate a field's value. The field formula uses numbers, functions, and values from other cells in each record to create values for a field. Field formulas can contain numbers, field names, operators (such as + or −), and functions. Here is an example of what a field formula might look like:



A Formulas start with an equal sign
B Addition operator
C Number
D Field name
E Multiplication operator
F Division operator
G Subtraction operator
H Square Root function
I Function argument

Each field can have only one field formula. When you type a field formula into a cell, Works automatically applies the same formula to all other cells in existing records for that field. When you enter data into a new record, Works automatically uses the field formula to create a value in the appropriate field in the new record.

A field formula can use values from other cells in the same record. It can also use the value in the corresponding cell from the previous record so you can create a running total similar to that in a checkbook.

A field formula such as =Sales+Tax contains field names. Works uses the values in the Sales and Tax fields to determine the field formula's value.

Field formulas such as =3 or ="Sales" are called constant formulas. A constant formula enters a single value into a cell. These are useful for when you want the Database to enter proposed responses into a new record.

A field formula such as =SQRT(Voltage) contains a function. A function is a built-in equation you can use to perform a complicated calculation easily. In this case, the SQRT function calculates the square root of the value in the Voltage field.

To discover all of the functions you can use in the Database, see Chapter 7, "Spreadsheet and Database Functions."

Text

Text is just a series of characters. The following are examples of text you can enter into a formula bar:

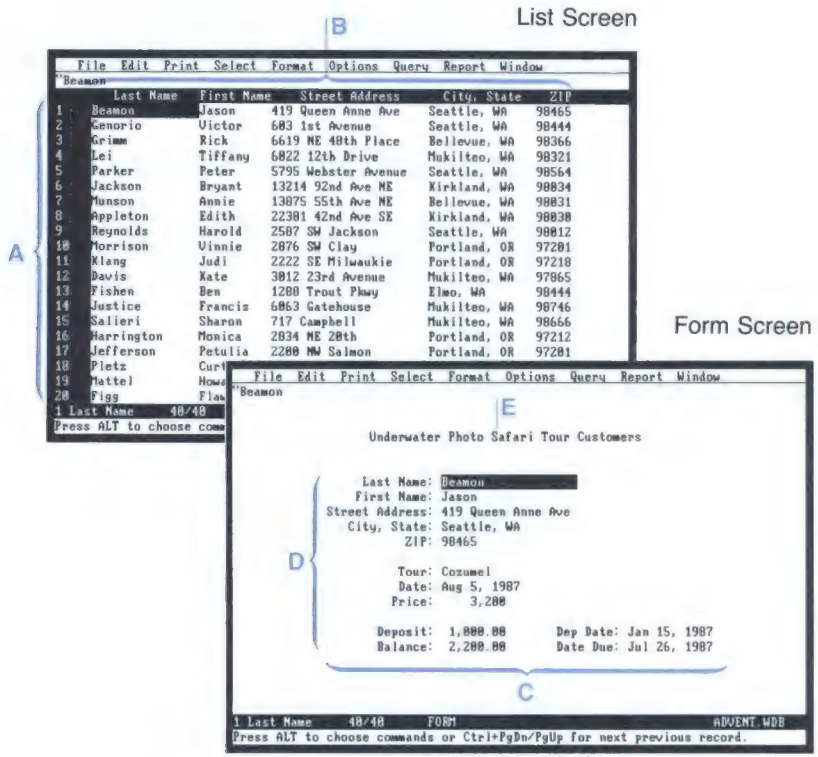
- Melvin Morsmere
- 1600 Pennsylvania Avenue
- It was a dark and stormy night
- 555-1212
- 123-45-6789

Creating a Database

You begin creating a database by organizing your ideas and information. These steps will help you clarify your thoughts:

- *Choose a subject.* For example, do you want a client database for the company, or just for the company's West Coast division? Choosing a subject tells you what information you'll need to enter into your database records and what the fields should be named.

- *Decide how you want to display information.* If you will be entering data from preprinted forms or want to see one record at a time, you may want to set up your database on the Form screen. If you want to see several records at once, you may want to begin on the List screen. Since it is very easy to switch back and forth between the screens, you may want to use both.


List Screen
B
File Edit Print Select Format Options Query Report Window
"Beamon
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 603 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6822 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98038
9 Reynolds Harold 2587 SW Jackson Seattle, WA 98012
10 Morrison Vinnie 2876 SW Clay Portland, OR 97201
11 Klang Judi 2222 SE Milwaukie Portland, OR 97218
12 Davis Kate 3812 23rd Avenue Mukilteo, WA 97865
13 Fishen Ben 1288 Trout Pkwy Elmo, WA 98444
14 Justice Francis 6863 Gatehouse Mukilteo, WA 98746
15 Salieri Sharon 717 Campbell Mukilteo, WA 98666
16 Harrington Monica 2834 NE 28th Portland, OR 97212
17 Jefferson Petulia 2288 NW Salmon Portland, OR 97201
18 Pletz Curt
19 Mattel How
20 Figg Fla
1 Last Name 48/48
Press ALT to choose com
A
Form Screen
File Edit Print Select Format Options Query Report Window
"Beamon
E
Underwater Photo Safari Tour Customers
Last Name: Beamon
First Name: Jason
Street Address: 419 Queen Anne Ave
City, State: Seattle, WA
ZIP: 98465
Tour: Cozumel
Date: Aug 5, 1987
Price: 3,288
Deposit: 1,888.88
Balance: 2,288.88
Dep Date: Jan 15, 1987
Date Due: Jul 26, 1987
D
C
1 Last Name 48/48 FORM ADVENT.WDB
Press ALT to choose commands or Ctrl+PgDn/PgUp for next previous record.

A Shows several records at once
B Shows a few fields of large records
C Shows a single record
D Shows several or all fields on one screen
E Shows descriptive labels

Works lets you look at a database in two ways: the List screen and the Form screen. The List screen lets you work with a database much as you'd work with a spreadsheet. The grid of records and fields makes it convenient for working with several records at a time. The Form screen lets you look at your database one record at a time.

Works lets you use the Form Design screen to work with a database, much as you'd work with forms or sheets of paper. You position cells anywhere you want on the screen to create a form into which you can enter data. If you need room, you can use additional screens to make your form longer. Works lets you use up to eight screens per form. Forms are convenient for working with one record at a time.

Creating a Database Using the List Screen

The first step toward creating a database is creating the database file. When you first create a database, Works assumes you want to create it as a form. If you want to create it as a list, you display the List screen before you create fields and enter information.

To create a database and display the List screen

1. From the File menu, choose New.
2. In the New dialog box, select Database.
3. Press ENTER.

   Works displays the Form Design screen.
4. Press F10 to exit the Form Design screen and display the Form screen.
5. From the Options menu, choose View List.

If you are familiar with the Spreadsheet, then you already know how to use the List screen. Many of the commands and moving-around keys work the same way on the List screen as they do on the Spreadsheet.

Each column is a field and each row is a record. A field and record intersect to form a cell. Records are numbered 1-4096. Fields have names that you provide. They can be up to 15 characters long.

To name a field using the List screen

1. Move the cursor to any cell in the field you want to name.
2. From the Edit menu, choose Name.
3. In the Name text box, type the field name.
4. Press ENTER.

Repeat this procedure for each field in your database. When your fields are named, you can begin entering data into your database.

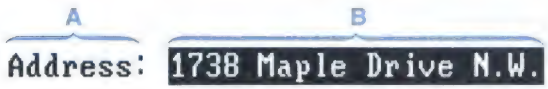
Creating a Database Using the Form Screen

When you create a database with the File menu's New command, Works assumes that you want to create a Form. You use the Form Design screen to create, name, and position the cells and labels that make up your form. A form can be up to eight screens long. Once you've created a form, you can use the Form screen to enter the information into your database.

To create a database file

1. From the File menu, choose New.
2. In the New dialog box, select Database.
3. Press ENTER.

When you first create a database file, Works displays the Form Design screen. Use this screen to lay out the cells and labels that make up your database form. A form can be up to eight screens long.



A Field name
B Cell and cell contents

A field on the Form screen contains two parts: the field name and the cell. The field name, such as Phone, describes the data in the cell. On the Form screen, a field can be up to 15 characters long, followed by a colon (:). The field names you create on the Form screen appear across the top of the List screen.

You can use labels for such things as titles or instructions. Labels do not hold data. A label can be any text, so long as the last character is not a colon (:). If you want to use a colon as the last character, the first character must be a double quotation mark ("). For example, Addresses and "Addresses: are both acceptable labels.

To create a field or label on the Form Design screen

1. Move the cursor to where you want the field or label.

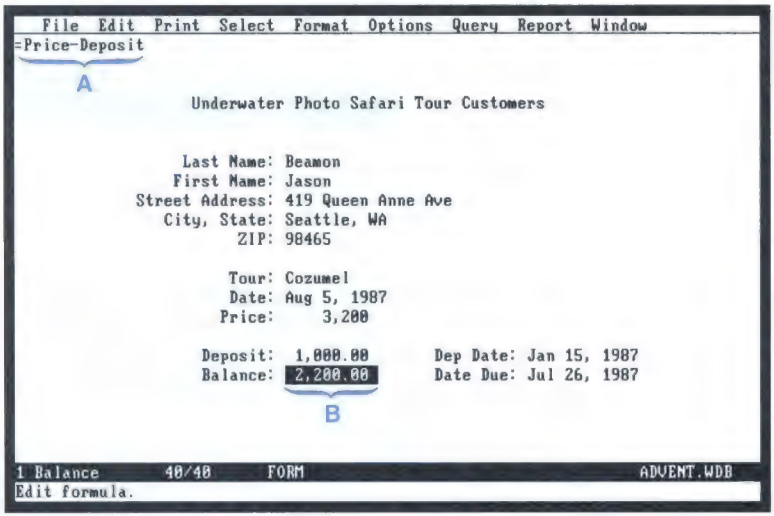
   If you want to put the field or label on another of the eight screens, use the PAGE UP or PAGE DOWN key to move to the appropriate screen.
2. Type the field name or label.
3. Press ENTER.

Repeat this procedure for every label and field you want in your form. When you are finished designing the form on the Form Design screen, you can go to the Form screen and enter information into your database.

To exit the Form Design screen and display the Form screen

- Press F10.

Entering and Editing



A Use the formula bar to enter and edit numbers, formulas, or text in the active cell.

B The active cell displays the value of the numbers, formulas and text entered in the formula bar.

Regardless of whether you created your database using the Form or List screen, you enter information into the database cells using the formula bar. Once the information is entered, you can change it at any time by editing it in the formula bar. The following sections describe how to enter text, numbers, and field formulas, and how to edit them.

Entering Text

Text in Works Database can be addresses, phone numbers, department names, or any other information that is not a number or formula. If you enter text that is longer than the width of the cell, Works displays as much of the text as possible.

Any text starting with an equal sign or a number that is text, such as a code number, should be preceded by a double quotation mark (″). This prevents Works from interpreting what follows as a formula. For example, if you want to display =Great!= or 1132 as text in a cell, you'd have to type ″=Great!= or ″1132 in the formula bar.

To enter text

1. Select a cell where you want to enter the text.
2. In the formula bar, type the text.
3. Press ENTER.

Entering Numbers

You can enter numbers into cells using a variety of formats:

2234 2,234 223.0543 −223 (223)
10 3/4 2.23E02 10% $14.50

Works displays ###### in a cell if the formatted number is too long to display within the width of the cell. If you widen the cell enough, Works then displays the number.

To enter numbers

1. Select a cell where you want to enter the number.
2. In the formula bar, type the number.
3. Press ENTER.

Entering Field Formulas

A field formula is an equation that calculates a new value from existing fields. For example, =Sales+Tax is a formula that adds the values in the fields named Sales and Tax. You can include in field formulas only cells from the same record. For calculations such as keeping a running balance, you can also include the cell immediately above the one holding the field formula. Field formulas begin with an equal sign (=).

To put a field name in a formula, you can either type it in or use point mode to insert the desired reference automatically.

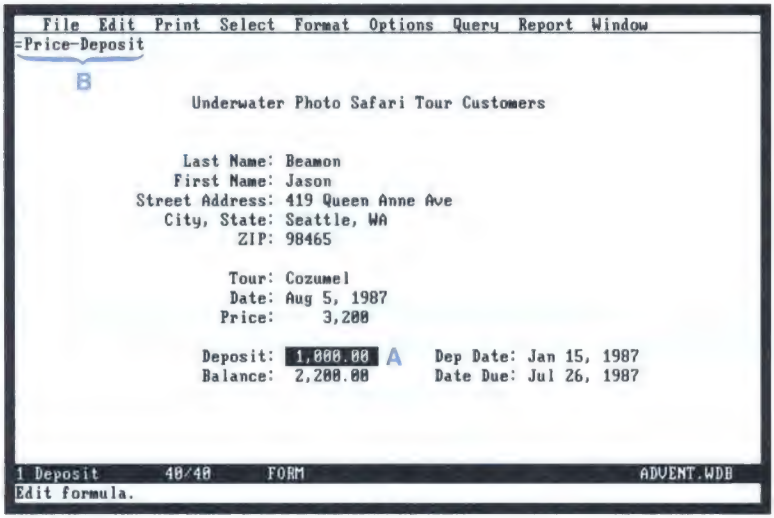
To enter a field formula

1. Select the cell where you want to enter the field formula.
2. Type an equal sign (=), followed by the field formula.
3. Press ENTER.

Tip

Using Point Mode to Insert References

On the List screen, you can use point mode to insert a field name into a formula automatically as you select cells in the database. As you move the highlight within the database, the field name in the formula bar changes to reflect the current selection. When you have selected the appropriate cell, you simply continue typing the rest of the formula.



A If you move the highlight while typing a formula...

B ...Works inserts the selected cell's field name into the formula.

To enter field names with point mode

1. Type the formula up to the point where you want to insert the field name.
2. Select the cell in the record whose field name you want to insert.
3. Type the rest of the formula.
4. Press ENTER.

Editing

Editing is the process of changing information that has already been entered into the database. You are editing whenever you correct a misspelled word, change a field formula, or replace an existing cell's contents.

You can edit a cell at any time. Begin by selecting the cell to be changed and pressing F2. This activates the formula bar. Editing in a formula bar is just like editing in a text box. The same editing keys are used. Following are some of the basic editing keys:

Press	To
LEFT	Move the cursor left one character
RIGHT	Move the cursor right one character
HOME	Move the cursor to the beginning of the cell contents
END	Move the cursor to the end of the cell contents
SHIFT + DIRECTION key	Select characters in the direction of the arrow
BACKSPACE	Delete the character to the left of the cursor
DELETE	Delete either the selected characters or just the character directly above the cursor

For more information on editing keys, see Chapter 1, "Introduction to Basic Skills."

After you finish typing your changes, press ENTER to place them in the cell. Your changes are not made until you press ENTER. If you change your mind during editing, simply press ESCAPE to cancel the changes and restore the cell to its original condition.

To edit a cell's contents

1. Select the cell you want to edit.
2. Press F2.
3. Use the editing keys to make changes.
4. Press ENTER.

To erase a cell

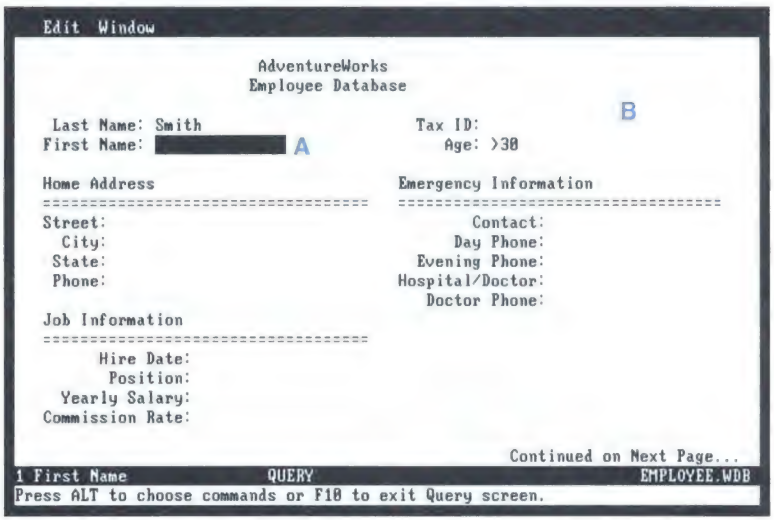
1. Select the cell you want to erase.
2. Press BACKSPACE.
3. Press ENTER.

To erase a field formula

1. Select a cell in the field whose formula you want to erase.
2. Type an equal sign (=).
3. Press ENTER.

Querying the Database

Querying lets you display all the records that match certain criteria. For example, you could look at all of the salespersons in Des Moines, or all clients in Washington with outstanding balances greater than $1,000 whose payments are over 30 days past due.



A The criteria in a query tell Works which records you want to display.

B The Query screen resembles the Form screen.

The Query screen provides the framework for a query. Each cell can contain one rule, called a criterion, that Works uses when determining which database records to display or hide.

How Querying Works

To query your database you define the query, and then apply it to the database. You define a query by creating criteria: logical rules that tell Works which records to display and hide. If the fields in a record match every criterion, Works displays the record. If even one of the criteria doesn't match, it hides the record. If you don't enter a criterion into a cell, Works assumes that you want to display all information in the database for that cell.

Once you've defined the query, you can apply it to the database. When you exit the Query screen, Works searches for and displays all of the database records that match the criteria. The List screen displays all of these records. The Form screen lets you display the matching records one at a time.

General Rules for Defining Criteria

Place a criterion into the field to which it applies. For example, the criterion for selecting a last name should go into the Last Name field, and so forth. The following table shows several examples of criteria:

This formula	In this field	Means
100	Units	Units equals 100
>15	Price	Price greater than 15
>15&<25	Price	Price between 15 and 25
=Units*>=1000	Price	Units times Price is at least 1000
=(Units*>=1000)& (Date>'4/15/86')	Price	Units times Price is at least 1000 and Date is after April 15, 1986

Criteria, unlike database and spreadsheet formulas, can use text operands and arguments if you enclose them in double quotation marks. The following examples could have been entered in the Last Name field:

This formula	Means
="Smith"	Last name is Smith
="S*"	Last name begins with S
>="S"	Last names after S alphabetically
==="Smith"¦="Smythe"	Last name is Smith or Smythe

Works uses many of the logical operators you already know, such as = (equals) or > (greater than). It also includes some new ones. You can use the following operators in your criteria:

Operator	Name
=	Equals
<>	Does not equal
<	Less than
>	Greater than
>=	Greater than or equal to
<=	Less than or equal to
¦	Or
&	And
~	Not

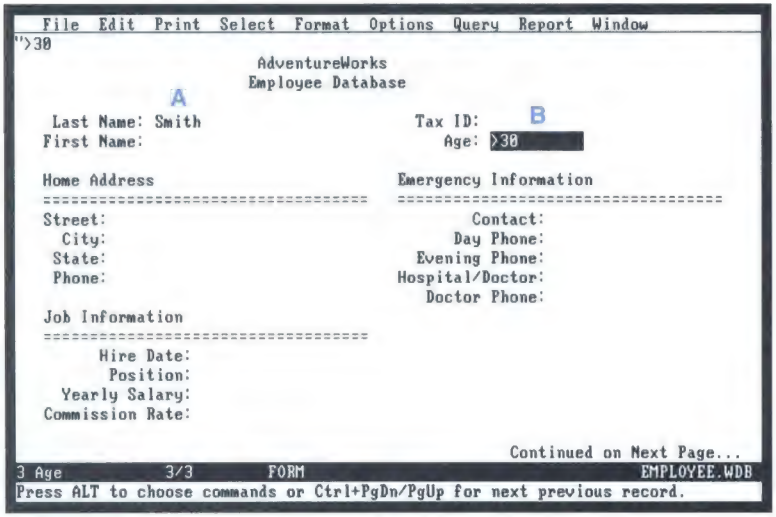
Using Criteria

There are two kinds of criteria that are particularly common: equality criteria and comparison criteria. Equality criteria simply try to match the criteria to the record. For example, if you enter Smith in the Last Name field, Works will find all records where the last name is Smith.

Comparison criteria try to find information that falls into ranges. For example, if you enter >15&<25 in the Price cell, Works will find all records where the price is between 15 and 25 exclusive.

Creating and Changing a Query

You use the Query screen to create or change a query. The cells on the Query screen are arranged like those on the Form screen. To set up a new query, you delete the current query and then enter the criteria for the new query.



A Show all employees whose last name is Smith ...

B ... And who are more than 30 years old.

To create a new query

1. From the Query menu on the List or Form screen, choose Define.
2. From the Edit menu, choose Delete.

Once you delete the current query, the Query screen displays blank cells that you can use to enter the criteria for the new query.

To enter a criterion

1. From the Query screen, select the cell into which you want to enter a criterion.
2. Type the criterion.
3. Press ENTER.

After you have entered all of the criteria, you can apply the query and see the result.

Applying Queries

After you have entered your criteria on the Query screen, you apply the query with the Edit menu's Exit Query command. This both returns you to the List or Form screen and hides all records that do not match the criteria.

To apply a query

- From the Edit menu, choose Exit Query.

Once you have defined a query, you might want to apply it over and over again without changing it. For example, after you apply it, you may edit some records and add some new ones. You can then apply the query again with the Apply Query command to see which records now match the criteria.

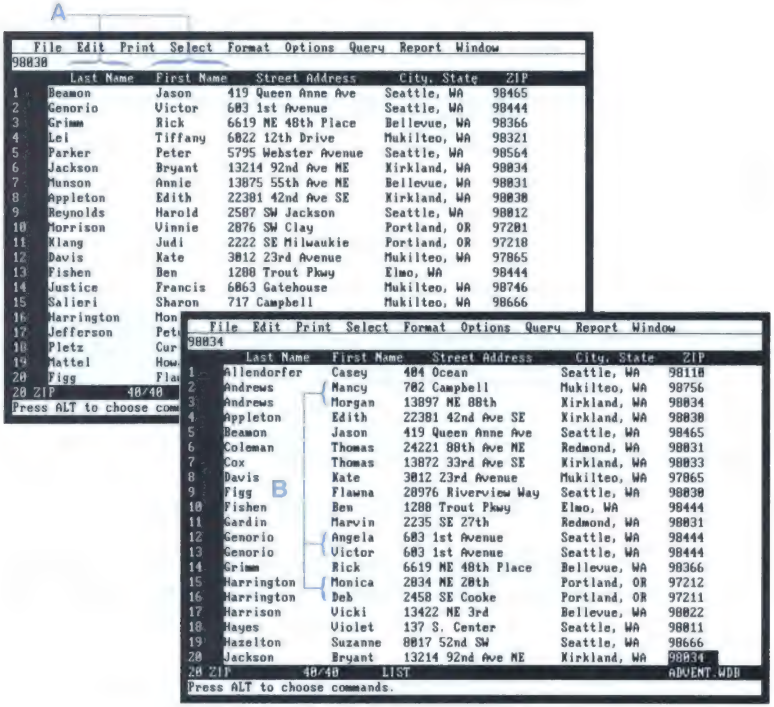
To apply a query from the List or Form screen

- From the Query menu, choose Apply Query.

Remember that the Form screen displays one record at a time. If you want to see all records selected by a query, one screenful at a time, use the List screen.

Sorting Records

Works can sort all database information in either ascending or descending order based on up to three sortfields. You specify the fields you want to sort and whether they will be sorted in ascending or descending order. For example, a phone book is sorted in ascending order by last name, and then by first name. If the phone book were randomly entered in a database, you could sort it by specifying the Last Name field as the first sort column and the First Name field as the second sort column.


A
File Edit Print Select Format Options Query Report Window
98038
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 683 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6822 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98038
9 Reynolds Harold 2587 SW Jackson Seattle, WA 98012
10 Morrison Vinnie 2876 SW Clay Portland, OR 97201
11 Klang Judi 2222 SE Milwaukie Portland, OR 97210
12 Davis Kate 3812 23rd Avenue Mukilteo, WA 97865
13 Fishen Ben 1200 Trout Pkwy Elmo, WA 98444
14 Justice Francis 6863 Gatehouse Mukilteo, WA 98746
15 Salieri Sharon 717 Campbell Mukilteo, WA 98666
20 ZIP 40/40
Press ALT to choose com
File Edit Print Select Format Options Query Report Window
98034
Last Name First Name Street Address City, State ZIP
1 Allendorfer Casey 404 Ocean Seattle, WA 98110
2 Andrews Nancy 702 Campbell Mukilteo, WA 98756
3 Andrews Morgan 13897 NE 88th Kirkland, WA 98034
4 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98038
5 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
6 Coleman Thomas 24221 88th Ave NE Redmond, WA 98031
7 Cox Thomas 13872 33rd Ave SE Kirkland, WA 98033
8 Davis Kate 3812 23rd Avenue Mukilteo, WA 97865
9 Figg Flawna 20976 Riverview Way Seattle, WA 98038
10 Fishen Ben 1200 Trout Pkwy Elmo, WA 98444
11 Gardin Marvin 2235 SE 27th Redmond, WA 98031
12 Genorio Angela 683 1st Avenue Seattle, WA 98444
13 Genorio Victor 683 1st Avenue Seattle, WA 98444
14 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
15 Harrington Monica 2834 NE 28th Portland, OR 97212
16 Harrington Deb 2458 SE Cooke Portland, OR 97211
17 Harrison Vicki 13422 NE 3rd Bellevue, WA 98022
18 Hayes Violet 137 S. Center Seattle, WA 98011
19 Hazelton Suzanne 8017 52nd SW Seattle, WA 98666
20 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
20 ZIP 40/40 LIST ADVENT.WDB
Press ALT to choose commands.
B

A The fields you want to sort are called *key fields.*

B *First Name* is the second key field. First names for each unique last name will be sorted alphabetically, as in a phone book.

Generally, ascending order sorts in the following order: text, NA values, numbers, ERR values, and blanks. Text includes the following characters, shown in ascending sort order (from left to right):

Character Type	Characters
Special characters	space ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~
Numberic characters	0 1 2 3 4 5 6 7 8 9
Alphabetic characters	a A b B thru z Z

Descending order is the opposite of ascending order. Works sorts text in strict alphabetical order, without respect to upper or lower case.

To sort a database

1. From the Query menu, choose Sort.
2. In the 1st Field text box, type the name of the first field you want to sort.
3. Select either Ascend or Descend.
4. Repeat the previous two steps for the second and third fields to be sorted.
5. Press ENTER.

To repeat a sort

1. From the Query menu, choose Sort.
2. Press ENTER.

Printing

You can print your entire database from the List-screen format to your printer or to a disk file. To print a database in Form-screen format, use the Word Processor's mail merge feature.

To print a database

1. From the Print menu, choose Print.
2. Turn on the Print Record and Field Labels check box to print the field names and record numbers.
3. Press ENTER.

This is the reference chapter for the Database. It contains information about the commands, about performing database tasks, and about other features.

Topics in this chapter are listed in alphabetical order.

A task topic describes the concepts and the procedures for a task. Some task topics describe using one feature or command. Other task topics describe several related features or commands.

A command topic describes the purpose of the command and each of the command's options.

At the end of most topics is a list of related topics.

Note that the screen or screens — List, Form, and Form Design — on which a command can be found is given immediately below the command subheading in parentheses.

The best way to learn more about the Database is to use the computer-based tutorial, Learning Microsoft Works. It offers several lessons on basic database concepts and how to create a database.

Aligning Values

The Format menu's Style command positions cell contents within selected fields. Unless you specify another alignment, Works uses General alignment.

To change alignment

1. Select a cell in the field you want to align.
2. From the Format menu, choose Style.
3. From the Alignment list box, select an alignment.
4. Press ENTER.

For information on	See
Locking fields	Protect Command
Using bold, underline, italic	Style Command

Apply Query Command (Query Menu)

The Apply Query command applies the active query to all database records. All records matching the criteria in the query are displayed. All those not matching are hidden.

Queries are also applied whenever you exit the Query screen with the Edit menu's Exit Query command. Or, as a shortcut, you can press F10. For more information on querying, see "Querying" in this chapter.

To apply a query

- From the Query menu on either the List or Form screen, choose Apply Query.

Changing a Form

You can change a form's design at any time by using the Form Design screen. On the Form Design screen you can:

- Move cells.
- Change field names and labels.
- Add fields or labels.
- Delete fields or labels.
- Change a cell's width.
- Insert and delete blank lines.

Changes made on the Form Design screen are immediately reflected on the Form, List, and Query screens.

To display the Form Design screen

- On the Form screen, choose Define Form from the Options menu.

To move cells on the Form Design screen

1. Select the field you want to move.
2. From the Edit menu, choose Move.
3. Move the cursor to the new location.
4. Press ENTER.

To change a field name or label on the Form Design screen

1. Select the field or label you want to change.
2. Press F2.
3. Edit the field name or label with the editing keys.
4. Press ENTER.

To add a field or label on the Form Design screen

1. Move the cursor to where you want the new field.
2. Type the field name, followed by a colon (:). To type a label, omit the colon.
3. Press ENTER.

To delete a field on the Form Design screen

1. Select the field you want to delete.
2. From the Edit menu, choose Delete.
3. Press ENTER.

To delete a label on the Form Design screen

1. Select the label you want to delete.
2. From the Edit menu, choose Delete.
3. Press ENTER.

To change a cell's width on the Form Design screen

1. Select the cell whose width you want to change.
2. From the Format menu, choose Width.
3. In the Width text box, type the new width in total number of character spaces.
4. Press ENTER.

Inserting a Blank Line in a Form

The Edit menu's Insert command inserts a blank line on the form where the cursor is located. The new line is inserted above the line on which the cursor is located. All lines below the inserted line move downward one line.

To insert a blank line in a form on the Form Design screen

1. Move the cursor to where you want the new line inserted.
2. From the Edit menu, choose Insert.

Deleting a Blank Line from a Form on the Form Design Screen

The Edit menu's Delete command deletes from a form the blank line on which the cursor is located. Delete removes only blank lines that have no fields or labels.

To delete a blank line from a form

1. Move the cursor to the blank line you want to delete.
2. From the Edit menu, choose Delete.

Clear Command (Edit Menu)
(List, Form, Query)

The Clear command erases the contents of selected cells. Clear has no effect on cells containing field formulas.

For information on how to clear cells, see "Erasing" in this chapter.

Comma Command (Format Menu)
(List, Form, Form Design)

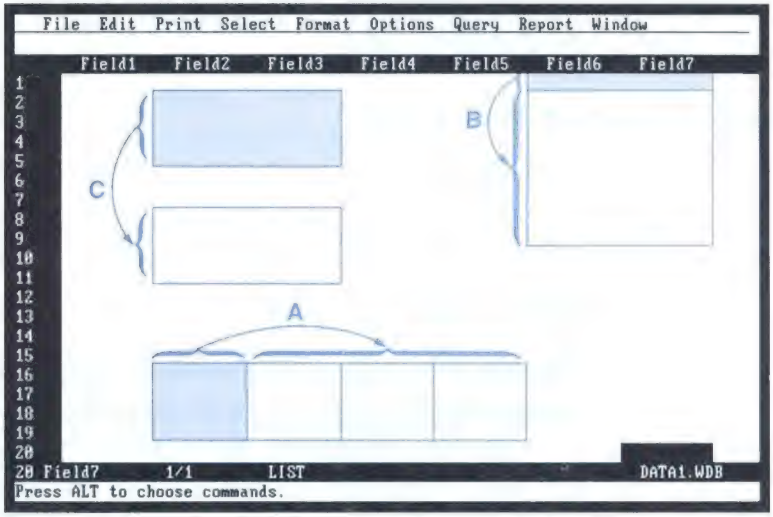
The Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses.

For information on	See
Using Comma and other formats	Formatting Numbers

Copying

The copy commands copy the selected cell's contents into other database cells or into other Works files (they do not copy field formulas). This lets you type a number or text once, then copy it to several cells. With copying, you can enter information quickly and reduce the chance for error.

The List screen's Edit menu has three copy commands: Fill Right, Fill Down, and Copy. The Form and Form Design screens' Edit menus have only the Copy command.



A Fill Right copies the first column of selected cells into the selected cells to the right.

B Fill Down copies the first row of selected cells into the selected cells below.

C Copy makes one copy of the selected cells into another part of the database.

Using Fill Right and Fill Down

The Fill Right and Fill Down commands make multiple copies of selected cells, both displayed and hidden, into adjacent columns or rows, respectively. Fill Down does not copy into hidden records.

The Fill Right command copies the leftmost column of selected cells into the selected cells immediately to the right. If you are copying cells holding field formulas, Works copies only the cell contents and not the formulas themselves.

To copy with Fill Right on the List screen

1. Select the cells you want to copy and as many cells immediately to the right of these cells into which the contents will be placed.
2. From the Edit menu, choose Fill Right.

The Fill Down command copies the top row of selected cells into the selected cells immediately below.

To copy with Fill Down on the List screen

1. Select the cells you want to copy and the cells immediately below into which the copies will be placed.
2. From the Edit menu, choose Fill Down.

Using Copy

The Edit menu's Copy command makes a copy of the selected information:

- On the List screen, it copies the selected cells to another part of the database. You can also copy selected cells to other Works files.
- On the Form screen, it copies the selected record to another record.
- On the Form Design screen, it copies the selected label to a new location.

To copy cells with Copy on the List screen

1. Select the cells you want to copy.
2. From the Edit menu, choose Copy.
3. Select the cell in the upper-left corner of the area into which you want to place the copy.
4. Press ENTER.

To copy a record with Copy on the Form screen

1. Select any cell in the record you want to copy.
2. From the Edit menu, choose Copy.
3. Select any cell in the record to which you want to copy.
4. Press ENTER.

To copy a label with Copy on the Form Design screen

1. Select the label you want to copy.
2. From the Edit menu, choose Copy.
3. Move the cursor to the new location.
4. Press ENTER.

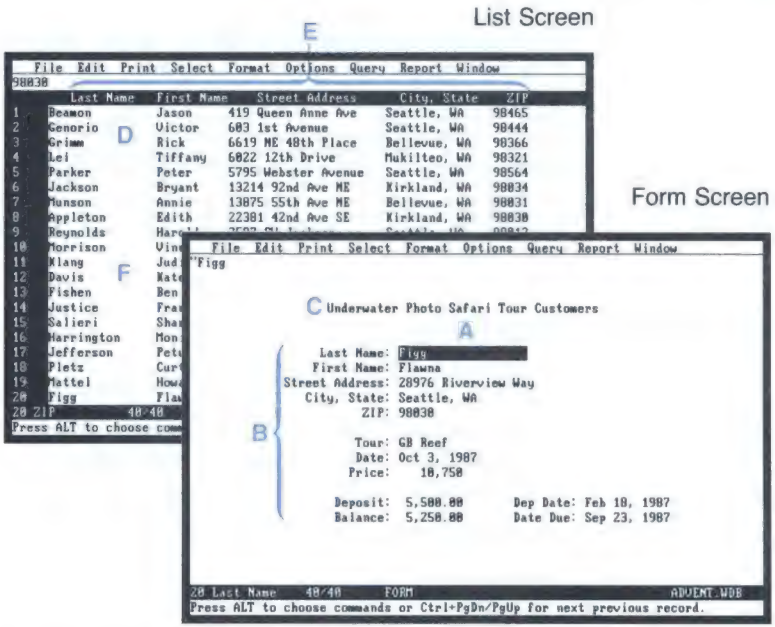
To repeat the previous Copy command

You can make multiple copies of the selected cells by repeating the previous Copy command. Use this procedure whenever you need to place copies in several parts of a database.

1. Select the cell to which you want to copy.
2. Press ALT + ENTER.

   You can also press SHIFT + F7.

Creating a Database


List Screen
E
File Edit Print Select Format Options Query Report Window
Last Name First Name Street Address City, State ZIP
Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
Genorio Victor 603 1st Avenue Seattle, WA 98444
Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
Lei Tiffany 6022 12th Drive Mukilteo, WA 98321
Parker Peter 5795 Webster Avenue Seattle, WA 98564
Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
Munson Annie 13875 55th Ave NE Bellevue, WA 98031
Appleton Edith 22381 42nd Ave SE Kirkland, WA 98030
D
F
Form Screen
File Edit Print Select Format Options Query Report Window
Figg
C Underwater Photo Safari Tour Customers
A
Last Name: Figg
First Name: Flawna
Street Address: 28976 Riverview Way
City, State: Seattle, WA
ZIP: 98030
B
Tour: GB Reef
Date: Oct 3, 1987
Price: 10,750
Deposit: 5,500.00
Balance: 5,250.00
Dep Date: Feb 10, 1987
Date Due: Sep 23, 1987
Press ALT to choose commands or Ctrl+PgDn/PgUp for next previous record.

A The Form screen shows one record at a time...
B ...Displaying many or all fields at once...
C ...And uses labels for descriptions.
D The List screen shows several records at once...
E ...Shows a few fields of a large record...
F ...And does not show labels.

Works lets you look at a database in two ways: the List screen and the Form screen. You can create a database using either the List or Form screen. You need to create a database only once. As you create a database on the Form screen, Works simultaneously creates the List-screen version of the database. The reverse is also true. Regardless of which screen you begin with, you can easily switch back and forth between the screens as you use the database.

The List screen lets you work with a database much as you'd work with a spreadsheet. The row/column format makes it convenient for working with several records at a time.

The Form screen lets you work with a database much as you'd work with printed forms. One record is shown at a time. To create a form into which you can enter information, you use the Form Design screen to position cells anywhere you want on up to eight screens at a time.

Creating a Database Using the List Screen

When you first create a database, Works assumes you want to create it as a form. If you want to create a list, you display the List screen before you create fields and enter information.

To display the List screen

1. Press F10 to exit the Form Design screen and display the Form screen.
2. From the Options menu, choose View List.

If you are familiar with the Spreadsheet, then you already know how to use the List screen. Many of the commands and cursor-movement keys work the same way.

Each column is a field and each row is a record. A field and record intersect to form a cell.

To name a field using the List screen

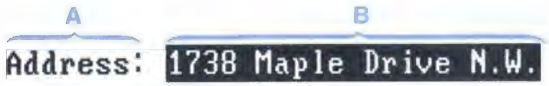
1. Move the cursor to any cell in the field you want to name.
2. From the Edit menu, choose Name.
3. In the Name text box, type the field name.

   On the List screen, you don't need to add the final colon to a field name.
4. Press ENTER.

Repeat this procedure for each field in your database. If you don't create a field name, Works creates one for you when you begin to enter information into a field. You may want to change the name to something more descriptive.

Creating a Database Using the Form Screen

When you create a database with the File menu's New command, Works assumes that you want to create a form. You use the Form Design screen to create, name, and position the cells and labels that make up your form. A form can be up to eight screens long. Once you've created a form, you can use the Form screen to enter the information into your database.



A Field name
B Cell and cell contents

Creating Cells and Labels

A field on the Form screen contains two parts: the field name and the cell. A field name, such as Phone, describes the information in the cell. A field name can be up to 15 characters long, followed by a colon (:). The field names you create on the Form screen appear across the top of the List screen.

You can use labels for such things as titles or instructions. Labels do not hold information. A label can be any text, so long as the last character is not a colon (:). If you want to use a colon as the last character of a label, precede the label with a double quotation mark (″).

To create a cell or label

1. Move the cursor with the DIRECTION keys to where you want the cell or label.

   If you want to put the cell or label on another of the eight available screens, use the PAGE UP or PAGE DOWN key to move to the appropriate screen.
2. Type the field name followed by a colon (:). To type a label, omit the trailing colon.
3. Press ENTER.

Repeat this procedure for every label and field you want in your form. When you are finished designing the form, use the Form screen to enter data into your database.

To exit the Form Design screen and display the Form screen

- From the Edit menu, choose Exit Design.
  You can also press F10.

For information on	See
Entering and editing field names, labels, or data	Entering and Editing
Naming fields	Name Command

Dates and Times

You can enter dates or times into cells and use them in field formulas. Dates can be entered in long form (Apr 15, 1988) or short form (4/15/88). Times can be entered in 24-hour form (14:30:00) or 12-hour form (2:30 P.M.). The following sections describe how to use dates and times in cells and field formulas.

Using Dates

The Works calendar begins with January 1, 1900 and ends with June 3, 2079. You can use any date between these two dates in a cell or field formula. Works interprets dates before or after these dates as text.

You can enter dates into cells in either long form or short form. The following table shows the long and short forms Works recognizes:

To enter	Type the date like this
Long Form	
Month, day, year	Oct 30, 1960
Month, year	Oct, 1960

To enter	Type the date like this
Month, day	Oct 30
Month	Oct
Short Form	
Month, day, year	10/30/1960
Month, year	10/1960
Month, day	10/30

You can enter dates into a formula by entering them in month/day/year short form and enclosing them in single quotation marks ('). For information on using dates in field formulas, see "Field Formulas" in this chapter.

Years can be entered as two digits (60 instead of 1960). Works assumes the current century. Works is also flexible about how you punctuate a long-form date. All of the following are acceptable ways for entering January 1, 1985:

Jan 1, 1985 Jan 1 1985 Jan, 1 1985 Jan, 1, 1985

Tip Works can do date arithmetic because it assigns an integer to each day of its calendar. January 1, 1900 is day 1, January 2 is day 2, and so on through June 3, 2079 (day 65,534). For example, if you enter the formula 'Jan 2, 1900'-'Jan 1, 1900', Works converts the dates to integers and solves the formula as 2 − 1, giving the answer 1.

Using Times

The Works clock begins with 12:00:00 P.M. and ends with 11:59:59 P.M. You can enter any time into a cell or field formula using either 24-hour or 12-hour form. The following table shows the forms that Works recognizes:

To enter	Type the time like this
24-hour Form	
Hour, minute, second	14:30:00
Hour, minute	14:30
12-hour Form	
Hour, minute, second	2:30:00 PM
Hour, minute	2:30 PM
Hour	2 PM

You can enter times into a field formula by using hour:minute:second 12-hour form and enclosing them in single quotation marks ('). For information on using times in field formulas, see "Field Formulas" in this chapter.

Tip Works can do time arithmetic because it assigns a decimal fraction to hour, minute, and second of the day. 12:00:00 P.M. is 0.0 and 11:59:59 P.M. is 0.999. For example, if you enter the formula ='2:30:00 A.M.'-'12:00:00 P.M.', Works converts the times to decimal fractions first, then calculates the elapsed time.

Entering the current date or time in a cell

You can use two special keys to type the current date or time into a cell. Works enters the date in a form similar to 10/30/87. Works enters the time in a form similar to 2:30 P.M.

To insert the current date or time

1. To insert the current date, press CONTROL+;
   To insert the current time, press CONTROL+SHIFT+;
2. Press ENTER.

For information on	See
Time/Date dialog box	Time/Date Command

Define Form Command (Options Menu) (Form)

The Define Form command displays the Form Design screen so you can create, rename, add, delete, or move the cells and labels on a form. You can also change the width of a cell. To enter information into your database, use the List or Form screen.

To display the Form Design screen

- From the Form screen's Options menu, choose Define Form.

To exit the Form Design screen

- From the Edit menu, choose Exit Form Design.

  You can also press F10.

For information on creating a new form, see "Creating a Database" in this chapter. For information on changing an existing form, see "Changing a Form" in this chapter.

Define Query Command (Query Menu) (List, Form)

The Define Query command displays the Query screen and the current query. Use the Query screen to create a new query or to change the current query.

To display the Query screen from the List or Form screen

- From the Query menu, choose Define Query.

To exit the Query screen

- From the Edit menu, choose Exit Query.

For information on querying databases, see "Querying" in this chapter.

Define Report Command (Report Menu) (List, Form)

The Define Report command displays the Report screen. From the Report screen you can change the definition for the active report.

To display the Report screen from the List or Form screen

- From the Report menu, choose Define Report.

To exit the Report screen

- From the Report menu, choose Exit Report.

For information on creating a report, see Chapter 12, "Introduction to Reporting."

Delete Command (Edit Menu) (List, Form, Form Design, Query)

- On the List screen, the Delete command removes the selected records or fields from the database. Delete does not remove hidden records from the database, only displayed records. However, it does remove hidden fields from the database.
- On the Form screen, Delete removes the selected record from the database.
- On the Form Design screen, Delete removes the selected field from the database.
- On the Query screen, Delete erases the current query so you can create a new one.

For information on	See
Creating a database	Creating a Database
Deleting fields, records, and queries	Erasing
How to delete a blank line from a form	Changing a Form
How to insert a blank line into a form	Changing a Form

Delete Page Break Command (Print Menu) (List)

The Delete Page Break command removes manual page breaks you inserted with the Print menu's Insert Page Break command. To delete a horizontal page break, first select the entire record containing the page break. To delete a vertical page break, first select the entire field to the right of the page break.

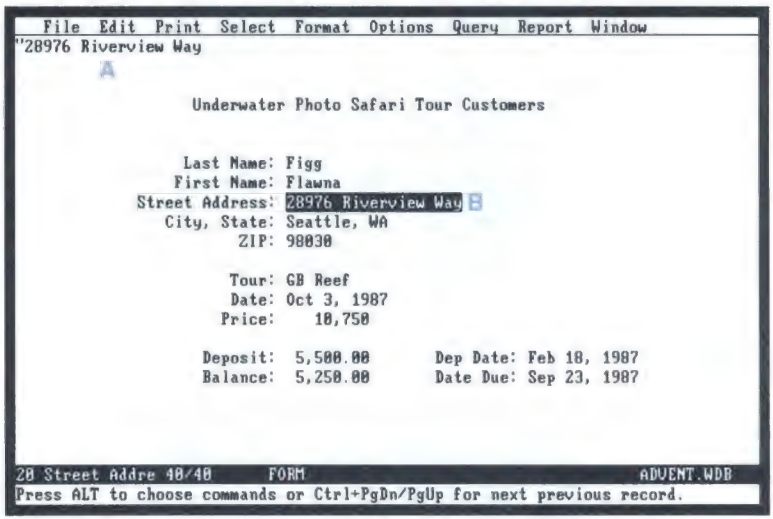
For information on	See
Deleting page breaks	Page Breaks and Pagination

Dollar Command (Format Menu) (List, Form, Form Design)

The Dollar command formats selected cells by inserting a leading dollar sign ($) and commas every three places (e.g., if you choose two decimal places, 1234567 becomes $1,234,567.00). Negative numbers are enclosed in parentheses.

For information on	See
Using Dollar and other formats	Formatting Numbers

Entering and Editing


File Edit Print Select Format Options Query Report Window
'28976 Riverview Way
A
Underwater Photo Safari Tour Customers
Last Name: Figg
First Name: Flawna
Street Address: 28976 Riverview Way B
City, State: Seattle, WA
ZIP: 98030
Tour: GB Reef
Date: Oct 3, 1987
Price: 10,750
Deposit: 5,500.00
Balance: 5,250.00
Dep Date: Feb 18, 1987
Date Due: Sep 23, 1987
28 Street Addre 40/40 FORM ADVENT.WDB
Press ALT to choose commands or Ctrl+PgDn/PgUp for next previous record.

A Use the formula bar to enter and edit numbers, formulas, or text in the active cell.

B The active cell displays the value of formulas and numbers entered in the formula bar.

You can enter and edit database information using either the List screen or the Form screen. Since both screens display the same information, you need to enter and edit information only once. In addition, you can edit or add to a form on the Form Design screen. For information on changing a form, see "Changing a Form" in this chapter.

You can enter text or numbers into any database cell. Entered text or numbers replaces anything that may have been in the cell. You can also enter a field formula for each field, but a field formula will not replace entered text or numbers.

You can change text, numbers, or field formulas at any time by editing them. You enter and edit the contents of a cell using the formula bar. The following sections describe how to enter text, numbers, and field formulas, and how to edit a cell.

Entering Text

Text can consist of phone numbers, department names, or any other information that is not a number or formula. If you enter text that is longer than the width of the cell, Works displays as much of the text as possible. Even though all of the text you enter may not be displayed, it is still stored in the cell. If you want to display more of the contents, you can change the width of the cell by using the Width command. If you use numbers, such as a part number, as descriptions, you can tell Works to interpret them as text by entering leading double quotation marks (e.g., "20184). If you enter text into a cell that shows a value resulting from a field formula, the text replaces the field formula for that cell only.

To enter text

1. Select a cell in which to enter the text.
2. In the formula bar, type the text.
3. Press ENTER.

Entering Numbers

You can enter numbers into cells in a variety of ways:

2234 2,234 223.0543 −223 (223) 10 3/4 2.23E02 10% $12.50

Fields initially display numeric values in General format. The General command formats values in selected fields as precisely as possible, using an integer (123), decimal (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

When you enter a number that contains a dollar sign ($) before the number or a percent sign (%) after the number, Works changes the format of the field to dollar or percent format, respectively.

Works displays ###### in a cell if the formatted number is too long to display within the width of the cell. If you widen the cell enough, Works then displays the number using the field's format. If you enter text into a cell that shows a value resulting from a field formula, the text replaces the field formula for that cell only.

To enter numbers

1. Select a cell to hold the number.
2. In the formula bar, type the number.
3. Press ENTER.

Tip ***Enter negative numbers using a minus sign or parentheses***

−145 or (145)

Works lets you enter negative numbers in two ways: by typing a minus sign (−) before the number, or by putting the number in parentheses. Both ways enter negative numbers.

Tip ***Use entry formats to speed formatting***

Normally, entering and formatting numbers is a two-step process: First you type the number, then you format it with one of the Format menu commands.

You can use entry formats to enter the number and its format at the same time. Works has entry formats for entering percentages, dollar signs, and short and long dates.

To enter	Type
Percentages	12.45%
Dollar signs	$12.45
Short dates	3/21/86 3/21 3/86
Long dates	Mar 21, 1986 Mar 21 Mar 86 Mar
12-hour times	2:30:00 PM 2:30 PM 2 PM
24-hour times	14:30:00 14:30

Tip

Enter stock market prices as fractions

You can enter the price of a stock as a fraction, and Works will automatically convert it to a decimal fraction. For example, if you enter 10 3/4, Works converts it to 10.75.

Tip

Use CONTROL+' to copy the formatted value above the active cell

You can use the shortcut key CONTROL+' to enter the contents of the corresponding cell in the previous record into the active cell.

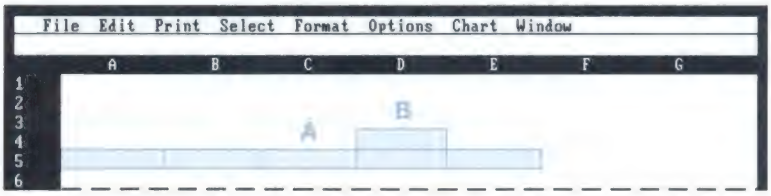
To copy the formatted value from the previous record

1. Select the cell into which you want to copy the value.
2. Press CONTROL+'
3. Press ENTER.

Entering Field Formulas

A field formula is an equation that calculates a value for every cell in a field that doesn't contain a number or text. For example, =7% places the figure 7% into every cell in a field. =Sales+Tax is a field formula that adds the values in fields named Sales and Tax. When you begin entering information into an empty record, Works automatically places the values from the field formulas into the cells.

A field formula can include a value from any cell in the same record. If you use a field's own name in its field formula, Works gets the value from the cell in the previous record. For example, if the Grand Total's field formula is =Sales+Grand Total, Works calculates a new grand total by adding the Sales field's value to the value in the Grand Total field from the previous record.



A A formula can use any cell in the record, plus...
B ...The same cell from the previous record.

To enter a field formula

1. Select any cell in the field where you want to enter a field formula.
2. Type an equal sign (=), then the field formula.
3. Press ENTER.

To clear a field formula

1. Select any cell in the field whose formula you want to clear.
2. Type an equal sign (=).
3. Press ENTER.

For information on using field formulas, see "Field Formulas" in this chapter.

Using Point Mode to Insert References

On the List screen, you can put a field name into a field formula by either typing it in or using point mode.

Point mode automatically inserts the name of the selected cell's field as you type the field formula. As you select different cells in the database by moving the highlight, the field name in the formula bar changes to reflect the current selection. When you have selected the appropriate cell, you simply continue typing the rest of the formula.

To enter field names into a formula with point mode

1. Type the formula up to where you want to insert the field name.
2. Select the cells you want to include.

   You can also use the Select menu's Go To command to select a specific field.
3. Type the rest of the formula and press ENTER.

Using Go To to Insert Field Names

You can use the Select menu's Go To command to insert a field name into a formula.

To insert a field name into a field formula

1. Type the field formula up to the point where you want to insert the field name.
2. From the Select menu, choose Go To.
3. From the Fields list box, select a field name.
4. Press ENTER.
5. Type the rest of the formula and press ENTER.

Editing

Editing is the process of changing information that you've already entered into the database. You are editing whenever you correct a misspelled word, change a number, or change a field formula.

You can edit a cell at any time. Begin by selecting the cell to be changed and pressing F2. This activates the formula bar. Editing in a formula bar is just like editing in a text box. The same editing keys are used. Following are some of the basic editing keys:

Press	To
LEFT	Move the cursor left one character
RIGHT	Move the cursor right one character
HOME	Move the cursor to the first character in the cell
END	Move the cursor to the last character in the cell

Press	To
SHIFT + DIRECTION keys	Select characters in the direction of the arrow
BACKSPACE	Delete the character to the left of the cursor
DELETE	Delete the selected characters or just the character above the cursor

After you finish typing your changes, press ENTER to place them in the cell. Your changes are not made until you press ENTER. If you change your mind during editing, simply press ESCAPE to cancel the changes and leave the cell as it was.

To edit a cell's contents

1. Select the cell to be edited.
2. Press F2.
3. Use the editing keys to make changes.
4. Press ENTER to place the new contents in the cell.

Erasing

Works has two ways to erase the contents from cells: clearing and deleting. Clearing erases the contents of the selection, leaving the cells empty. Deleting removes entire records or fields from the database. Cleared or deleted information cannot be recovered.

Clearing

The Edit menu's Clear command erases the contents of the selected cells. You can also use the BACKSPACE key to erase all or part of a cell's contents. Each time you press BACKSPACE, Works erases the character to the left of the cursor.

To clear cells using the Clear command

1. Select the cells you want to clear.
2. From the Edit menu, choose Clear.

To clear a cell using BACKSPACE

1. Select the cell you want to clear.
2. Press BACKSPACE.
3. Press ENTER.

Deleting

- On the List screen, the Delete command removes the selected records or fields from the database. You need to select entire records or fields before you use Delete.
- On the Form screen, Delete removes the selected record from the database.
- On the Form Design screen, Delete removes the selected label, or the selected field and all of its information, including the blank lines, from the form.
- On the Query screen, Delete removes the query so you can enter a new one.

Deleting a Cell from a Form

On the Form Design screen, you can use the Edit menu's Delete command to delete fields and labels from a form. Works removes any information in the selected fields from the database.

To delete a field from a form using the Form Design screen

1. On the Form Design screen, select the cell you want to delete.
2. From the Edit menu, choose Delete.
3. Press ENTER.

To delete a label from a form using the Form Design screen

1. Select the label you want to delete.
2. From the Edit menu, choose Delete.

Using the Form Screen to Delete

On the Form screen, you can delete one record at a time. If you want to delete several fields or records at once, use the List screen. If you want to delete a field from a form, use the Form Design screen.

To delete a record using the Form screen

1. Select any cell in the record you want to delete.
2. From the Select menu, choose Record.
3. From the Edit menu, choose Delete.

Using the List Screen to Delete

When you delete one or more fields, the fields to the right of the deleted fields shift to the left into the vacated fields. Likewise, the records below deleted records shift upward to occupy the space left by the vacated records.

To delete records or fields using the List screen

1. Select the records or fields you want to delete.
2. From the Edit menu, choose Delete.

Tip The Delete command deletes only displayed records. Hidden records are unaffected by the command. This feature helps you reorganize a database. First you hide all of the records you want to keep, then delete all the displayed records that you don't want.

Unlike hidden records, hidden fields will be deleted if you delete the fields adjacent to them.

To delete unwanted records from the database

1. Use commands on the Query menu to display the records you want to delete.
2. Select the displayed records you want to remove from the database.
3. From the Edit menu, choose Delete.

The opposite also works: you can display all the records you want to keep, use the Query menu's Switch Hidden Records command to display the records you don't want, then delete the unwanted records.

Deleting a query

If you want to delete the entire query and start over again, you can use the Delete command on the Query screen's Edit menu. Works erases all criteria.

To delete a query on the Query screen

1. From the Query menu, choose Define.
2. From the Edit menu, choose Delete.

For information on	See
Creating a form	Creating a Database
Setting up queries	Querying

Exit Design Command (Edit Menu) (Form Design)

Shortcut key: F10

The Exit Design command exits the Form Design screen and returns to the Form screen.

To exit the Form Design screen

- From the Edit menu, choose Exit Design.

Exit Query Command (Edit Menu) (Query)

Shortcut key: F10

The Exit Query command exits the Query screen and returns you to where you were — the Form, List or Report Screen — when you made the query. Use Exit Query when you want to exit the Query screen and apply the query.

To exit the Query screen

- From the Edit menu, choose Exit Query.

Exponential Command (Format Menu) (List, Form, Form Design)

The Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, 1234567 becomes 1.23E+06). The exponent can range from - 300 to +300.

For information on	See
Using Exponential and other formats	Formatting Numbers

Field Command (Select Menu) (List)

Shortcut key: SHIFT+F8

The Field command extends the current selection to include entire fields. It is most often used before inserting or deleting fields, or inserting and deleting vertical page breaks.

For information on	See
Deleting fields	Erasing
Inserting and deleting page breaks	Page Breaks and Pagination
Inserting fields	Insert Command
Selecting fields or records	Selecting
Selecting records	Record Command

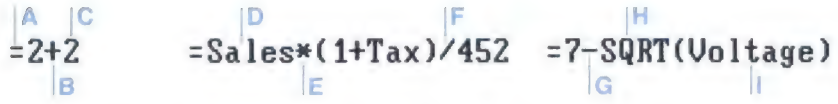
Field Formulas

A field formula is an equation that calculates a value for every cell in a field that doesn't contain a number or text. When you begin entering information into an empty record, Works automatically places the values from the field formulas into the cells. There are two types of field formulas: constant field formulas and equation field formulas.

A constant field formula automatically enters a number, text, date, or time into a cell whenever a new record is created. The following are examples of constant field formulas:

Type	To enter
=10	The number 10
="Marketing	The text Marketing
=4/15/87	The date 4/15/87
=12:16 P.M.	The time 12:16 PM

Equation field formulas are built from operators (e.g., + - * / ^), operands (e.g., numbers or field names), and functions (e.g., SQRT{voltage}).



A Formulas start with an equal sign
B Addition operator
C Number
D Field name
E Multiplication operator
F Division operator
G Subtraction operator
H Square Root function
I Function argument

An equation field formula can include a value from any cell in the same record. If you use a field's own name in its field formula, Works gets the value from the cell in the previous record. For example, if the Grand Total's field formula is =Sales+Grand Total, Works calculates a new grand total by adding the Sales field's value to the value in the Grand Total field from the previous record. If a field name resembles a number (25) or a function (SIN X), enclose it in single quotation marks (').

A field formula can be as simple as =Sales − Cost, which subtracts the value in the Cost field from Sales field. Or, a formula can be complex, using data from many cells in the record:

=(income − expenses) − ((income − expenses)*tax)/shares

How Works Evaluates Field Formulas

Works applies field formulas through a process called "evaluation." Works follows standard algebraic rules when evaluating field formulas:

- Equations are evaluated from left to right.

- The contents of the innermost set of parentheses are evaluated first. Use parentheses whenever you want to change the order of evaluation.
- Operators are evaluated in a particular order.

The list below shows the operators you can use and their order of evaluation. Operators higher in the list are evaluated before operators lower in the list. If two or more operators have the same order of evaluation, Works evaluates them from left to right:

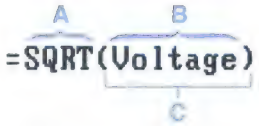
Operator	Name	Order of Evaluation
^	Exponentiation	1st
−	Negative (e.g., − 8)	2nd
+	Positive (e.g., +8)	2nd
*	Multiply	3rd
/	Divide	3rd
+	Add	4th
−	Subtract	4th
=	Equals	5th
<>	Does not equal	5th
<	Less than	5th
>	Greater than	5th
<=	Less than or equal to	5th
>=	Greater than or equal to	5th
~	Not	6th
|	Or	7th
&	And	7th

To enter a field formula

1. Select the cell to hold the field formula.
2. Type an equal sign (=), then the field formula.
3. Press ENTER.

Using Functions in Field Formulas

A function is a built-in calculation that is similar to an arithmetic operator, such as + or − , in that it produces a new value from other values.



A Function name
B Argument
C Parentheses surrounding the argument

Each function consists of the function name, a set of parentheses, and arguments (the values the function uses to produce a new value). The arguments are separated by commas. Most functions have one or more arguments, although some functions, such as FALSE(), have no arguments.

An argument must be a number or an expression that results in a number. An argument can be a number, a cell or field name, another function, or any combination, such as Sales/12.

Since functions are like operators, you can use them as often as necessary anywhere in your field formula. For example, SIN(SQRT(voltage)) first computes the square root of the value in the voltage field, then calculates the sine of the result.

For information on using functions in field formulas, see Chapter 7, "Spreadsheet and Database Functions."

Using Dates and Times in Field Formulas

You can enter dates into a formula by entering them in month/day/year short form and enclosing them in single quotation marks (’). For example, the formula = ’3/30/88’ − ’1/1/88’ calculates the number of days between the two dates.

You can enter times into a field formula by entering them in hour:minute:second 12-hour form and enclosing them in single quotation marks (’). For example, the field formula = ’2:30:00 PM’ − ’12:00:00 PM’ calculates the elapsed time between the two times.

For information on	See
Editing a field formula	Entering and Editing
Selecting records and fields	Selecting

Fill Down Command
Fill Right Command (Edit Menu)
(List)

The Fill Down command copies the top row of a selection into the adjacent selected cells below. It does not affect hidden records.

The Fill Right command copies the leftmost column of a selection into the adjacent selected, displayed, and hidden cells to the right.

For information on	See
Using Fill Down and Fill Right	Copying

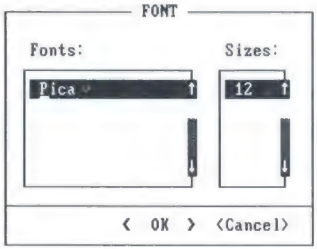
Fixed Command (Format Menu)
(List, Form, Form Design)

The Fixed command formats selected cells by displaying a specified number of decimal places (e.g., if you choose two decimal places, then 1234.560 becomes 1234.56).

For information on	See
Using Fixed and other formats	Formatting Numbers

Font Command (Print Menu)
(List)

The Font command selects the font and font size to use when printing the database. The fonts and font sizes your printer can produce are shown in the list boxes. Fonts do not appear on the screen. Works prints the entire database using the selected font and font size. Use a non-proportional space font, such as Courier or Pica, to print databases. Proportionally-spaced fonts produce irregular columns.



Fonts Select the font you want to use for printing the database.

Sizes Select the font size you want for printing the database.

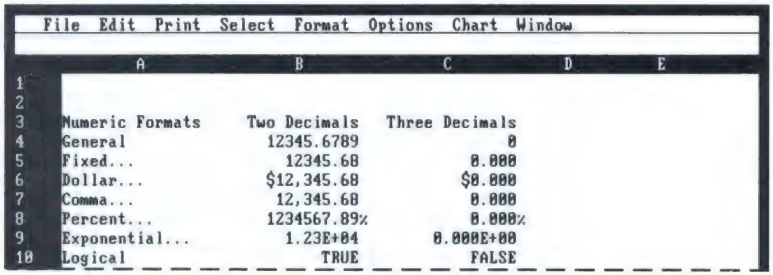
To select font and font size

1. From the Print menu, choose Font.
2. In the Fonts list box, select a font.
3. In the Sizes list box, select a font size.
4. Press ENTER.

For information on	See
Using fonts and font sizes for your printer	Select Printer, in Chapter 2

Formatting Numbers

You can use the Format menu's seven format commands to change the appearance of numeric values in fields.


File Edit Print Select Format Options Chart Window
A B C D E
1
2
3 Numeric Formats Two Decimals Three Decimals
4 General 12345.6789 0
5 Fixed... 12345.68 0.000
6 Dollar... $12,345.68 $0.000
7 Comma... 12,345.68 0.000
8 Percent... 1234567.89% 0.000%
9 Exponential... 1.23E+04 0.000E+00
10 Logical TRUE FALSE

General Format

Cells initially display numeric values in General format. The General command formats selected cells as precisely as possible, using an integer (123), decimal (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

Fixed Format

The Fixed command formats selected cells by showing the specified number of decimal places (e.g., if you choose two decimal places, then 1234.560 becomes 1234.56).

Dollar Format

The Dollar command formats selected cells by inserting a leading dollar sign ($) and commas every three places (e.g., if you choose two decimal places, 1234567 becomes $1,234,567.00). Negative numbers are enclosed in parentheses.

Comma Format

The Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses.

Percent Format

The Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, .43 becomes 43.00%).

Exponential Format

The Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, 1234567 becomes 1.23E+06). The exponent can range from -306 to +305.

Logical Format

The Logical command formats selected cells to display either TRUE or FALSE in place of numeric values. All cells whose value is zero display FALSE. All non-zero cells show TRUE.

To format cells

1. Select any cell in the field you want to format.
2. From the Format menu, choose one of Works format commands: General, Fixed, Dollar, Comma, Percent, Exponential, or Logical.
3. If you choose Fixed, Dollar, Comma, Percent, or Exponential format, type the number of decimal places you want.
4. Press ENTER.

General Command (Format Menu) (List, Form, Form Design)

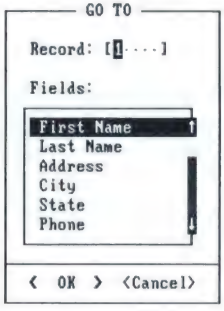
The General command formats selected cells as precisely as possible, using an integer (123), decimal (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

For information on	See
Using General and other formats	Formatting Numbers

Go To Command (Select Menu) (List, Form)

Shortcut key: F5

The Go To command selects the cell indicated by the record number you enter and the field name you select in the dialog box. You can use the Go To command to move to a specific location in the database.



Record Selects the record whose number you type in the text box.

Fields Lists the field names in your database. The highlight moves to the field selected in the Fields list box.

To go to a field and record (Form, List)

1. From the Select menu, choose the Go To command.
2. In the Record text box, type the record number.
3. In the Fields list box, select the field name.
4. Press ENTER.

You can also use the Select menu's Go To command to insert a field name into a field formula.

To insert a field name in a field formula

1. Type the formula up to the point where you want the field name inserted.
2. From the Select menu, choose Go To.
3. In the Fields list box, select the field name.
4. Press ENTER.
5. Type the rest of the formula and press ENTER.

For information on entering and editing field formulas, see "Entering and Editing" in this chapter.

Hide Record Command (Query Menu) (List, Form)

The Hide Record command hides the selected records. Hidden records are not displayed on either the Form or List screen; they will not be included in reports or printed; and they will not be deleted by the Delete command. Empty records cannot be hidden.

For information on hiding records and fields, see "Hiding" in this chapter.

Hiding

Works hides records whenever you query the database. All records that do not match the query criteria are hidden so that only the matching records are displayed. You can refine your query by using the List screen to hide any additional records that you don't want. Once you have the records you want displayed, you can print them or include them in a report.

For more information on querying your database, see "Querying" in this chapter.

To hide records using the List screen

1. Select the records you want to hide.
2. From the Query menu, choose Hide Record.

To re-display all hidden records using the List screen

- From the Query menu, choose Show All Records.

You can hide fields to prevent them from displaying or printing. Information from hidden fields can still be included in a report.

To hide fields using the List screen

1. In each field, select a cell you want to hide.
2. From the Format menu, choose Width.
3. Type *0*
4. Press ENTER.

To re-display hidden fields using the List screen

1. From the Select menu, choose Go To.
2. In the Fields list box, select the name of the hidden field.
3. Press ENTER.
4. From the Format menu, choose Width.
5. Type any column width greater than 0.
   Works will widen the hidden field to the specified width.
6. Press ENTER.

Insert Command (Edit Menu) (List, Form)

An entire record or field must be selected before you can insert a new record or field.

Inserted fields move existing fields on the right farther to the right, but the fields to the left do not move. Inserted records move existing records below them farther downward, but leave the records above them in place. Works inserts as many records or fields as you have selected.

To insert records or fields on the List screen

1. Select the records or fields where the new records or fields will be inserted.
2. From the Edit menu, choose Insert.

When inserting records on the Form screen, the Insert command inserts a blank record into the database. The inserted record is placed before the displayed record.

To insert a record on the Form screen

1. Select the record in front of which you want to insert a blank record.
2. From the Edit menu, choose Insert.

For information on	See
Changing the look of a form	Changing a Form
Deleting records or fields	Erasing
Selecting entire records or fields	Selecting

Insert Page Break Command (Print Menu) (List)

The Insert Page Break command inserts a page break above or to the left of the selected record or field. An entire record or field must be selected before you can insert a page break.

To insert a page break

1. Select the record or field you want to be the first row or column on a page.
2. From the Print menu, choose Insert Page Break.

For information on	See
Page breaks	Page Breaks and Pagination
Removing page breaks	Delete Page Break Command

Keyboard

The following tables show what keys to press to perform various tasks with Works. For some tasks you use key combinations, pressing the first key, then pressing the next key. These key combinations are shown like this: SHIFT + F3. Many of the keys you press are shortcut keys for commands on the menu.

List and Report Screen Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Select row	CONTROL + F8
Select column	SHIFT + F8
Select database	SHIFT + CONTROL + F8
Switch between Form/List	F9
Exit Reporting	F10
View Report	SHIFT + F10

Form Screen Function Keys

Name	Press
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7

To move around a file or to move the highlight, press the appropriate movement keys. To select cells and extend the selection, move to the cell you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys. To collapse a selection, press ESCAPE.

List and Report Screen Movement and Selecting Keys

To move	Press
Left one cell	LEFT
Right one cell	RIGHT
Up one cell	UP
Down one cell	DOWN
Left one cell in range	SHIFT + TAB
Right one cell in range	TAB
Up one cell in range	SHIFT + ENTER
Down one cell in range	ENTER
One block left	CONTROL + LEFT
One block right	CONTROL + RIGHT
One block up	CONTROL + UP
One block down	CONTROL + DOWN
One screen left	CONTROL + PAGE UP
One screen right	CONTROL + PAGE DOWN
One screen up	PAGE UP
One screen down	PAGE DOWN
To beginning of record	HOME
To end of record	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Collapse a selection	ESCAPE

Form Design Screen Movement Keys

To move	Press
Left	LEFT
Right	RIGHT
Up one line	UP
Down one line	DOWN
To beginning of line	HOME
To end of line	END
Next screen	PAGE DOWN
Previous screen	PAGE UP
To beginning of form	CONTROL + HOME
To end of form	CONTROL + END

Form and Query Screen Movement and Selecting Keys

To move to	Press
Previous cell	LEFT or UP
Next cell	RIGHT or DOWN
Previous screen	PAGE UP
Next screen	PAGE DOWN
Previous record	CONTROL + PAGE UP
Next record	CONTROL + PAGE DOWN
Beginning of database	CONTROL + HOME
End of database	CONTROL + END

Special Database Keys

To	Press
Copy cell above (List)	CONTROL + '
Enter current date	CONTROL + ;
Enter current time	SHIFT + CONTROL + ;

Layout Command (Print Menu)
(List, Form)

The Layout command lets you specify margins and page sizes for your printed database.

For information on laying out your database pages, see "Page Layout" in Chapter 2, "Using Basic Skills."

Logical Command (Format Menu)
(List, Form)

The Logical command formats selected cells to display either TRUE or FALSE in place of numeric values. All cells whose value is zero display FALSE. All non-zero cells show TRUE.

For information on	See
Using Logical and other formats	Formatting Numbers

Move Command (Edit Menu)
(List, Form, Form Design)

The Move command moves records and fields within the database.

Moving on the List Screen

On the List screen, the Move command moves the contents of entire fields or records to another part of the database.

When you move entire records or fields, the Move command inserts them between existing records or fields. An entire record or field must be selected before you can move it.

When fields are moved, existing fields to the right move farther to the right, but existing fields to the left do not move. When records are moved, existing records below the new location move downward, but existing records above it remain in place.

To move records or fields on the List screen

1. Select the records or fields you want to move.
2. From the Edit menu, choose Move.
3. Select the entire record or field to which you want to move.
4. Press ENTER.

Moving on the Form Screen

On the Form screen, you can move an entire record to a new location.

To move a record on the Form screen

1. Select the record you want to move.
2. From the Edit menu, choose Move.
3. Select the record before which you want to place the moved record.
4. Press ENTER.

Moving on the Form Design Screen

On the Form Design screen, you can use the Move command to move cells or labels to different positions anywhere in the form.

You can also move lines up or down on the form by inserting and deleting rows. For information on how to insert and delete rows, see "Changing a Form" in this chapter.

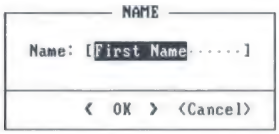
To move labels or cells on the Form Design screen

1. Select the cell or label you want to move.
2. From the Edit menu, choose Move.
3. Move the cursor to where you want the label or cell to begin.
4. Press ENTER.

For information on	See
Selecting fields and records	Selecting

Name Command (Edit Menu) (List)

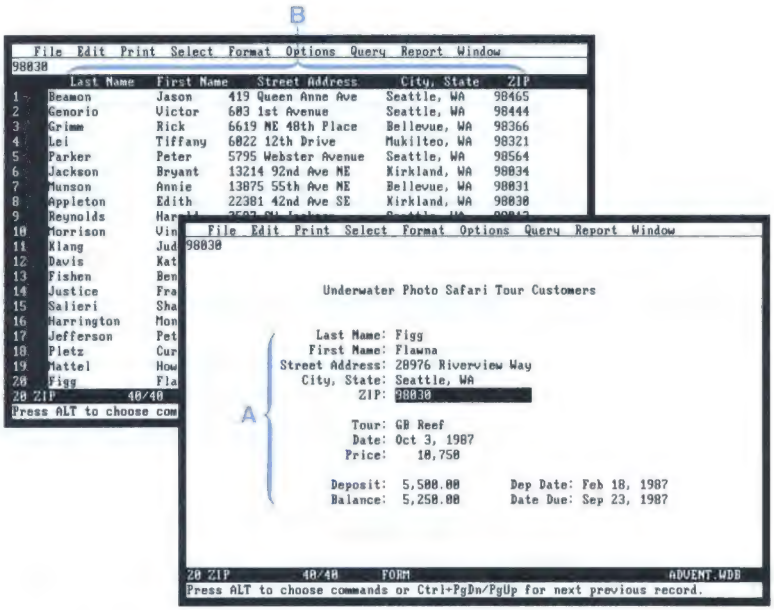
The Name command names or renames the selected field.



Name Displays the name of the field where the active cell is located. You can use any text you want as a field name. If you want to use a field name that resembles a number (25) or function (SIN X) in a field formula, enclose it in single quotation marks ('). For example, if you want to use a field named 25 in a field formula, you would enter the field formula in this manner: *='25'*6%*.

For information on how to name fields, see "Naming Fields" in this chapter.

Naming Fields


B
File Edit Print Select Format Options Query Report Window
98030
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 603 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6022 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98030
9 Reynolds Har
10 Morrison Vin
11 Klang Jud
12 Davis Kat
13 Fishen Ben
14 Justice Fra
15 Salieri Sha
16 Harrington Mon
17 Jefferson Pet
18 Pletz Cur
19 Mattel How
20 Figg Fla
20 ZIP 40/40
Press ALT to choose com
File Edit Print Select Format Options Query Report Window
98030
Underwater Photo Safari Tour Customers
A
Last Name: Figg
First Name: Flawna
Street Address: 20976 Riverview Way
City, State: Seattle, WA
ZIP: 98030
Tour: GB Reef
Date: Oct 3, 1987
Price: 10,750
Deposit: 5,500.00
Balance: 5,250.00
Dep Date: Feb 18, 1987
Date Due: Sep 23, 1987
20 ZIP 40/40 FORM ADVENT.WDB
Press ALT to choose commands or Ctrl+PgDn/PgUp for next previous record.

A On the Form screen, field names are displayed to the left of the colon.

B On the List screen, field names are displayed across the top of the work area.

A field name is made of text up to 15 characters long that describes the contents of a database field. On the List screen, Works displays field names across the top of the work area. On the Form screen, they appear on the left side of each field.

Works automatically places new fields on both the Form and List screens. If you rename a field, Works makes the change on both screens. You can rename a field at any time without losing the data in the field.

Naming Fields on the List Screen

On the List screen, you use the Edit menu's Name command to name or rename fields. Works automatically makes the changes on both the List and Form screens. You do not need to type a trailing colon when naming fields on the List screen as you do on the Form Design screen.

To name or rename a field on the List screen

1. Select a cell in the field you want to name or rename.
2. From the Edit menu, choose Name.
3. In the Name text box, type or edit the field name.
4. Press ENTER.

Naming Fields on the Form Design Screen

You use the Form Design screen to create and edit the field names displayed on the Form and List screens. When you enter a field name on the Form Design screen, you must follow it with a colon (:). For example, First Name: or Customer #: are appropriate field names.

To create and name a field on the Form Design screen

1. Move the highlight to where you want the field.
2. Type the field name, followed by a colon (:).
3. Press ENTER.

To rename a field on the Form Design screen

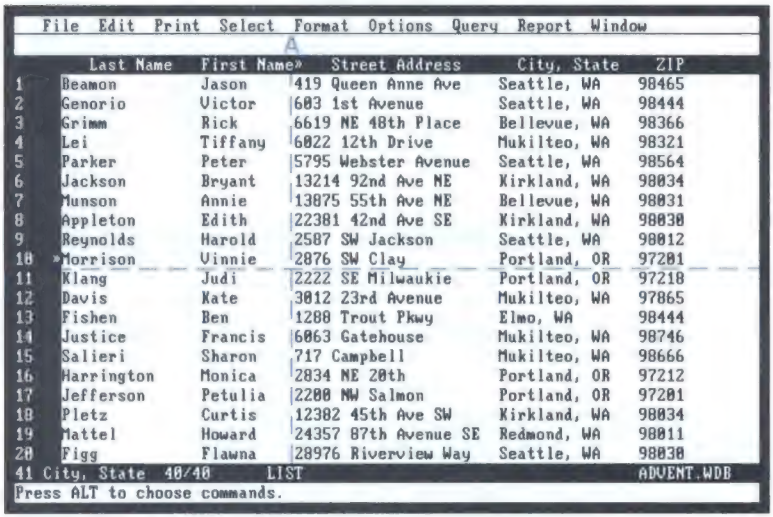
1. Select the cell with the field name you want to change.
2. Press F2 and edit the field name in the formula bar.
3. Press ENTER.

Page Breaks and Pagination

A page break tells the printer where to begin a new page. You can insert page breaks yourself or let Works determine them automatically for you. Works determines where automatic page breaks occur according to the margins and page size you set using the Print menu's Layout command. Works prints records until the page is full or until it encounters a page break you created.

Use the Print menu's Insert Page Break command to create your own page breaks. The Insert Page Break command creates a horizontal page break above a selected record, or creates a vertical page break to the left of a selected field. Therefore, the selected record or field becomes the first record or field on the next page.

Large databases usually require several pages. To print the entire database, you can lay out the pages as shown in the diagram.


File Edit Print Select Format Options Query Report Window
A
Last Name First Name» Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 603 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6022 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13075 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98030
9 Reynolds Harold 2587 SW Jackson Seattle, WA 98012
B
10 »Morrison Vinnie 2876 SW Clay Portland, OR 97201
11 Klang Judi 2222 SE Milwaukie Portland, OR 97218
12 Davis Kate 3012 23rd Avenue Mukilteo, WA 97865
13 Fishen Ben 1288 Trout Pkwy Elmo, WA 98444
14 Justice Francis 6063 Gatehouse Mukilteo, WA 98746
15 Salieri Sharon 717 Campbell Mukilteo, WA 98666
16 Harrington Monica 2834 NE 20th Portland, OR 97212
17 Jefferson Petulia 2200 NW Salmon Portland, OR 97201
18 Pletz Curtis 12382 45th Ave SW Kirkland, WA 98034
19 Mattel Howard 24357 87th Avenue SE Redmond, WA 98011
20 Figg Flawna 28976 Riverview Way Seattle, WA 98030
41 City, State 40/40 LIST ADVENT.WDB
Press ALT to choose commands.

A Vertical page break mark. Fields to the right of the mark print on the following pages.

B Horizontal page break mark. Records below the mark print on the following pages.

To insert a page break
(List)

1. Select the record or field before which you want the page break.
2. From the Print menu, choose Insert Page Break.

To delete a page break
(List)

1. Select the record or field containing the page break.
2. From the Print menu, choose Delete Page Break.

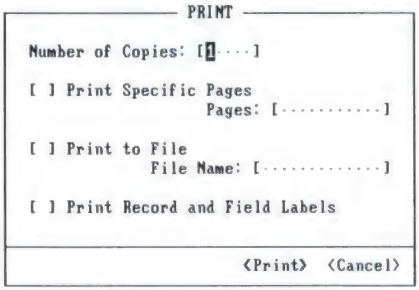
Percent Command (Format Menu)

The Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, then .43 becomes 43.00%). Negative percentages are preceded by a minus sign (−).

For information on	See
Using Percent and other formats	Formatting Numbers

Print Command (Print Menu)
(List, Form)

The Print command sends the current print area (as shown on the List screen) to a printer or to a disk file. You cannot print the database in the Form screen format, except by using the Word Processor's mail merge feature. For information on using mail merge, see Chapter 4, "Word Processor Reference."



Print Record and Field Labels Turn on this check box to print the field names across the top of each page and the record numbers (1 through 4096) down the left side of each page. Turn off the check box to prevent the record and field labels from printing.

To print a database

1. From the Print menu, choose Print.
2. Turn on the Print Record and Field Labels check box to print the field names and record numbers.
3. Press ENTER.

For information on	See
Laying out pages	Chapter 2, "Using Basic Skills"
Printing in Form screen format	Chapter 4, "Word Processor Reference"
Setting page breaks	Page Breaks and Pagination

Protect Command (Options Menu)

The Protect command turns the database's protection on and off. The command is marked when the database's protection is turned on. While the protection is turned on, many commands, such as the Format commands, are grayed and you cannot edit locked cells. You can change the content of unlocked cells only.

Protecting database cells is a two-step process:

- Use the Style command to lock or unlock the appropriate cells.
- Use the Options menu's Protect command to turn on the protection.

All cells in a database are initially locked. You should unlock all cells whose contents you want to edit when the protection is turned on.

To unlock cells

All cells are locked until you unlock them.

1. Select the cells you want to unlock.

   These will be the cells whose contents you can change while the protection is enabled.
2. From the Format menu, choose Style.

3. Turn off the Locked check box to unlock the selected cells, or turn on the Locked check box to lock the selected cells.
4. Press ENTER.

To enable or disable the locks

After you lock and unlock the appropriate cells, you can turn on or "enable" the protection to prevent the locked cells from being changed. The contents of locked cells are not protected until you enable the protection.

- From the Options menu, choose Protect.

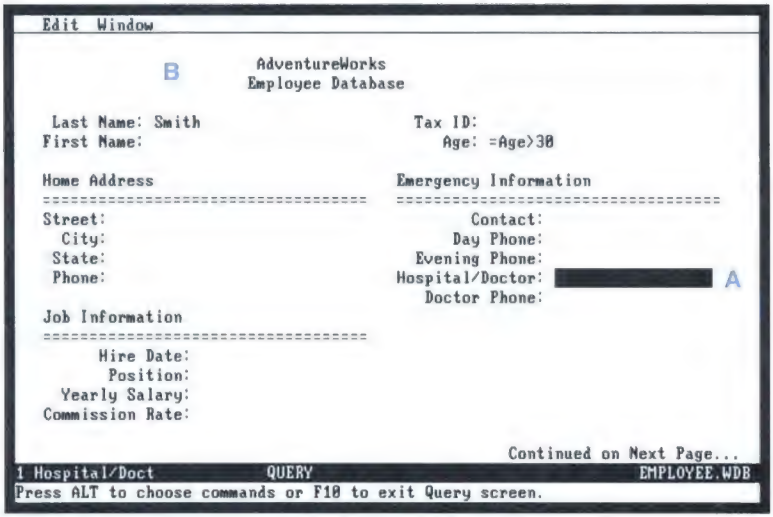
A mark beside the command on the menu bar means it is turned on. When it is turned on, you can use TAB and SHIFT+TAB to select only the unlocked cells. The highlight moves left to right, top to bottom, skipping over all locked cells.

Querying

Querying lets you display all the records that match certain criteria. For example, you could look at all salespersons in Des Moines, or all clients in Washington with outstanding balances greater than $1,000 whose payments are over 30 days past due. In this section you will find:

- How querying works
- General rules for specifying criteria
- Using criteria
- Using AND and OR
- Creating and changing a query
- Applying queries
- Reversing criteria
- Switching records

How Querying Works



A The criteria in a query tell Works which record you want to display.
B The Query screen resembles the Form screen.

The Query screen provides the framework for a query. Each cell can contain one rule, called a criterion, that Works uses when determining which database records to display or hide.

To query your database, you define the query and then apply it to the database. You define a query by specifying "criteria" — logical rules that tell Works which records to display and hide. If the fields in a record match every criterion, Works displays the record. If even one of the criteria doesn't match, it hides the record. If you don't enter a criterion into a cell, Works assumes that you want to display all information in the database for that cell.

Once you've defined the query, you can apply it to the database. Whenever you exit the Query screen, Works searches all the records to find those that match the criteria. The List screen displays all records that match the criteria. The Form screen lets you display the matching records one at a time.

General Rules for Specifying Criteria

The criteria refer to fields in the database and are like logical Database or Spreadsheet formulas. You can enter any criterion in any cell by including the field name in the criterion:

This criterion	Means
=Units=100	Units equals 100
=Price>15	Price is greater than 15
=Price>15&Price<25	Price is between 15 and 25
=Units*Price>=1000	Units times Price is 1000 or more
=(Units*Price>=1000)& (Date>'4/15/86')	Units times Price is 1000 or more and Date is after April 15, 1986

Note that in order to use a date in a criterion, you have to enclose the date in single quotation marks (').

It doesn't matter which cell or cells you put your criteria into, but it makes them easier to use if you place them properly. For example, the criterion for selecting a last name should go into the Last Name cell, and so forth. If you enter each criterion in the appropriate cell, you can shorten it by omitting the field name. The table below repeats the criteria from the previous table. Notice how short they have become:

This criterion	In this cell	Means
100	Units	Units equals 100
>15	Price	Price is greater than 15
>15&<25	Price	Price is between 15 and 25
=Units*>=1000	Price	Units times Price is 1000 or more
=(Units*>=1000)& (Date>'4/15/86')	Price	Units times Price is 1000 or more and Date is after April 15, 1986

Criteria, unlike database and spreadsheet formulas, can use text operands and arguments if you enclose the criteria in quotation marks. The following examples could have been entered in the Last Name field:

This formula	Means
="Smith"	Last Name is Smith
="S*"	Last Name begins with S
>="S"	Last Names S and after alphabetically
==="Smith"¦="Smythe"	Last Name is Smith or Smythe

Works uses many of the logical operators you already know, such as = (equals) or > (greater than). It also includes some new ones. You can use the following operators in your criteria:

Operator	Name
=	Equals
<>	Does not equal
<	Less than
>	Greater than
>=	Greater than or equal to
<=	Less than or equal to
¦	Or
&	And
~	Not

Using Criteria

There are two kinds of criteria that are particularly common: equality criteria and comparison criteria. Equality criteria simply try to match the criteria to the records. For example, if you enter Smith into the Last Name field, Works will find all records containing Smith in that field.

Comparison criteria try to locate information that falls between ranges. For example, if you enter >15&<25 into the Price cell, Works will find all records where the price is between 15 and 25.

Using Equality Criteria

Equality criteria try to match a single item in the criterion to a single item in a database cell. For example, if you enter Smith as a criterion in the Last Name field, Works looks through the Last Name fields in the database records for the name Smith. The table below shows several examples of equality criteria:

Type into any cell	To display all records whose
=Units=100	Units equals 100
=Last Name="Smith"	Last Name is Smith

Type into any cell	To display all records whose
=Last Name="S*"	Last Name begins with S
=Date='4/15/86'	Date is April 15, 1986

You can simplify the criteria by typing them into the proper cell. Note how the criteria below, while giving the same result, are easier to use because they were entered into the correct cell:

This criterion	In this cell	Means
100	Units cell	Units equals 100
Smith	Last Name cell	Last Name is Smith
S*	Last Name cell	Last Name begins with S
4/15/86	Date cell	Date is April 15, 1986

Because you are entering the text and date as constants rather than in formulas, you do not need to enclose them in double or single quotation marks.

Using Comparison Criteria

Comparison criteria look at each cell's contents and compare them to conditions defined in the criteria. For example, =Price>15 examines each cell in the Price field to see if it contains a number greater than 15.

Comparison criteria involve some comparison other than equality, such as greater than or not equal to. You can also combine two or more comparisons using the "and" or "or" operators.

You can use a set of algebraic and conditional operators in your comparison criteria:

Operator	Name
=	Equals
<>	Does not equal
<	Less than
>	Greater than
>=	Greater than or equal to
<=	Less than or equal to
¦	Or
&	And
~	Not

The table below shows several examples of comparison criteria:

Type into any cell	To display all records whose
=Price>15	Price is greater than 15
=Price>15&Price<25	Price is between 15 and 25
=Last Name>="S"	Last Name is after S alphabetically
=Last Name="Smith"¦Last Name="Smythe"	Last Name is Smith or Smythe

Whenever a criterion contains the field name of its own cell, you can leave the field name out; Works will assume that you mean the same field in which the formula is entered. For example:

This formula	In this cell	Means
>15	Price cell	Price is greater than 15
>15&<25	Price cell	Price is between 15 and 25
>="S"	Last Name cell	Last Name is after S alphabetically
=="Smith"¦="Smythe"	Last Name cell	Last Name is Smith or Smythe
=Units*>=1000	Price cell	Units times Price is 1000 or more

Notice that if the original formula begins with =field name, you can leave out both the field name and the = in front of it. In the last example, you can leave out Price but not Units, so the = in front of Units must stay.

Using AND and OR

As mentioned earlier, when you apply a query, all the criteria must match in order for a record to be displayed. In other words, if you enter criteria in more than one cell, the resulting query is interpreted in the following way:

first criterion AND second criterion AND third criterion AND ...

This is a very common type of query. For example, to find all clients who live in Seattle AND earn at least $50,000 per year, you would enter the following criteria:

City: Seattle
Income: >=50000

If "ANDed" criteria involve just one field, you can enter them in just one cell as a single criterion. For example, the criterion to find all clients who earn at least $50,000 AND less than $80,000 would be the following:

Income: >=50000&<80000

Another common type of query involves "ORed" criteria. This generally involves entering one criterion in one cell. For example, to find all clients who live in either Seattle OR Tacoma, you would enter the following criterion:

City: ==″Seattle″|=″Tacoma″

Though it is uncommon, you might want to "OR" criteria involving more than one field. In that case, you must put them in the same cell or else they will be "ANDed." For example, to find all clients who either live in Seattle OR who earn at least $50,000, you could enter the following single criterion in either the City cell or the Income cell:

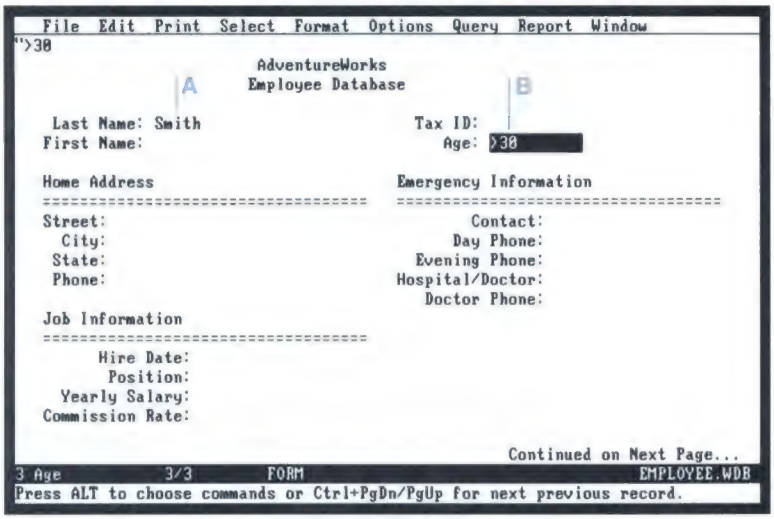
=City=″Seattle″|Income>=50000

If the City cell is active, you can omit the =City and enter:

==″Seattle″|Income>=50000

Creating and Changing a Query

You use the Query screen to create or change a query. Cells on the Query screen are arranged much as in the Form screen. To set up a new query, you delete the current query and then enter the criteria for the new query.



A Show all employees whose last name is Smith ...

B ... And who are more than 30 years old.

To create a new query (List, Form)

1. From the Query menu, choose Define Query.
2. From the Edit menu, choose Delete.

Once you delete the current query, the Query screen displays blank cells that you can use to enter the criteria for the new query.

To enter a criterion (Query)

1. Select the cell into which you want to enter a criterion.
2. Type the criterion.
3. Press ENTER.

After you have entered all of the criteria, you can apply the query and see the result.

Applying Queries

After you have entered your criteria on the Query screen, you apply the query with the Edit menu's Exit Query command. This returns you to the List or Form screen at the same time it hides all records that do not match the criteria.

To apply a query after entering the criteria

- From the Edit menu, choose Exit Query.

Once you have defined a query, you might want to apply it over and over again without changing it. For example, after you apply it once, you may edit some records and add some new ones. You can then apply the query again with the Apply Query command to see which records now match the criteria.

To apply a query from the List or Form screen

- From the Query menu, choose Apply Query.

Reversing Criteria

Often, rather than seeing all records that match a query, you want to see all records that don't match a query.

If a criterion is a simple comparison criterion such as >100, you can change it simply by changing the comparison operator. For example, the criterion <=100 has the opposite effect of >100. Similarly, <>"Smith" has the opposite effect of ="Smith" or simply Smith, and >='4/15/86' has the opposite effect of <'4/15/86'.

If a criterion is complex, you can reverse it simply by putting a NOT operator in front of the whole formula. For example, the opposite of the criteria

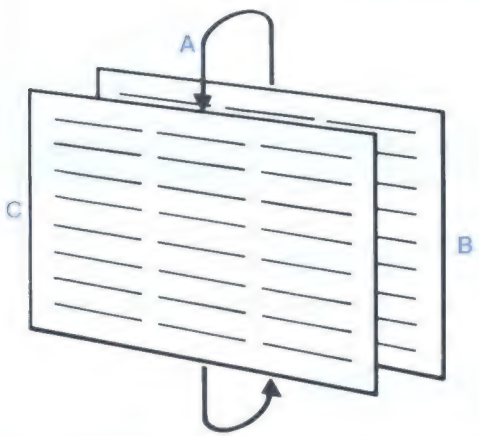
```
=Units*Price>=1000&Date>'4/15/86'
```

is

```
=~(Units*Price>=1000&Date>'4/15/86')
```

If a query contains more than one criterion, you might want to reverse the meaning of the entire query, not just of individual criteria. In that case, you can apply either of the above methods to each criterion. However, you might find it easier to use the Switch Hidden Records command.

Switching Records



A Switch Hidden Records swaps the displayed and hidden records.
B Hidden records
C Displayed records

The Query menu's Switch Hidden Records command swaps records you can display with records hidden by a query or by the Hide Record command. When you use the command, all displayable records are hidden and all hidden records become displayable. The List screen displays all displayable records a screenful at a time. The Form screen presents displayable records one record at a time. You can switch between the hidden and displayed records as often as you like.

When you query a database, Works hides all records that don't match the query's criteria. Using the Switch Hidden Records command, you can view all records that don't match the criteria.

For example, if you want to look at all of your registered customers who did not make a purchase within the past six months, you could query the database to show all the customers who did make a purchase within the past six months, and then switch the records to see those who didn't make a purchase.

To switch the hidden and displayed records (List, Form)

- From the Query menu, choose Switch Hidden Records.

To display all records

- From the Data menu, choose Show All Records.

Tip

- If you know you always want to see the records that don't match the query, you are better off editing the criteria in your query rather than having to choose Switch Hidden Records every time you apply the query. But if you like to switch back and forth between the matching and non-matching records, it is easier to use Switch Hidden Records than to edit your criteria continually.
- The Delete command deletes only displayed records. Hidden records are unaffected by the command. This feature helps you reorganize a database. First, you hide all of the records you want to keep, and then delete all the displayed records that you don't want.

  Unlike hidden records, hidden fields will be deleted if you delete the fields surrounding them.

To delete unwanted records from the database

1. Use Querying to display the records you want to delete.
2. Select the displayed records you want to remove from the database.
3. From the Edit menu, choose Delete.

The opposite also works: you can display all the records you want to keep, use the Query menu's Switch Hidden Records command to display the records you don't want, then delete the unwanted records.

Record Command (Select Menu)
(List)

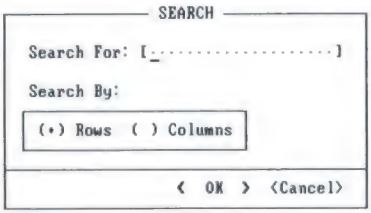
Shortcut key: CONTROL + F8

The Record command extends the current selection to include entire records. It is most often used before inserting or deleting records, or inserting and deleting horizontal page breaks.

For information on	See
Deleting records	Erasing
Inserting and deleting page breaks	Page Breaks and Pagination
Inserting records	Insert Command
Selecting fields	Field Command
Selecting fields or records	Selecting

Search Command (Select Menu)
(List, Form)

The Search command looks through the formatted numbers, formulas, and text in your database for the next occurrence of the text you want to find. Works looks for an exact match with the displayed information. For example, Works will not match 1000 and 1,000.

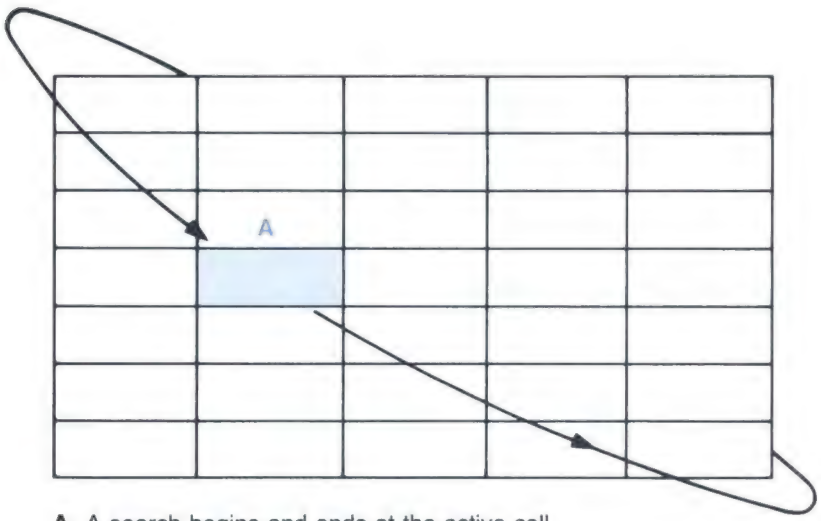


Search For Displays the text Works will look for.

Search By Specifies how Works searches the database. In a row-by-row search, Works searches the fields within the current record, then continues searching record by record. In a column-by-column search, Works searches the cells in the field first, then continues searching field by field.

Searching Using the List Screen

On the List screen, you can search either the entire database or a smaller group of selected cells. Works searches only records and fields that are not hidden.



A A search begins and ends at the active cell.

To search using the List screen

1. Select the cells you want to search.

   If you want to search the entire database, leave only the active cell selected.
2. From the Select menu, choose Search.

3. In the Search For text box, type the text you want to search for.
4. Select Rows to search record by record; select Columns to search field by field.
5. Press ENTER.

Searching Using the Form Screen

On the Form screen, Works searches all information you can display in the form. Hidden records are not searched. Works uses the List-screen order for searching the database.

1. From the Select menu, choose Search.
2. In the Search For text box, type the text you want to search for.
3. Select Rows to search record by record; select Columns to search field by field.
4. Press ENTER.

You can repeat the previous search to find the next occurrence of the text you are looking for. This feature is useful when you want to edit all database cells that contain certain information.

To repeat the previous search

- Press F7.

Tip

"Wildcards" help you find cells whose contents are similar, but not quite the same. You substitute wildcards for letters within the search item. Then Works finds all cells containing the search item. Works has two wildcard characters: the question mark (?) and the asterisk (*).

The question mark (?) stands for any single character in the same position as the question mark. For example, if you want to find a particular name in your spreadsheet, but are unsure whether the name was Smithson or Smithsen, you could type *Smiths?n* in the Search For text box. It will find either name.

The asterisk (*) stands for any number of characters in that same position. For example, if you type *s*p* in the Search For text box, Works would find all words that begin with an "s" and end with a "p," such as sip, strap, and stump.

Select Text Printer (Print Menu) (List, Form)

The Select Text Printer command tells Works what printer is attached to your computer.

For information on	See
Setting up and selecting printers	Chapter 2, "Using Basic Skills"

Selecting (List, Form)

You can use selecting to tell Works which cells you want to work with. Many commands apply only to the selected cells. For example, to format a field, you must first select a cell in the field.

A single cell, called the active cell, is selected at all times. The active cell is indicated by a highlight. The formula bar always shows the contents of the active cell, and the status line always shows the active cell's location.

Selecting on the List Screen

You can work with several cells at once rather than one cell at a time. For example, you can clear all of the cells in a field in one step if you select the field first. This is much faster than clearing each cell individually.

In List view, you can extend the selection from one cell to a group of cells. How much you enlarge the selection depends on what range you want to select.

To select a cell on the List screen

- Use the DIRECTION keys to move the highlight to the cell you want to select.

To select several cells on the List screen

1. Select the upper-left corner of the group of cells you want to select.
2. Press F8 and use the DIRECTION keys to extend the selection to the other cells.

   You can also hold down the SHIFT key and press the DIRECTION keys to extend the selection to a range.

To select fields and records on the List screen

1. Select a cell in each record or field you want to select.
2. To select records from the Select menu, choose Record; to select fields from the Select menu, choose Field.

To select the entire database on the List screen

1. From the Select menu, choose Field.
2. From the Select menu, choose Record.

You can also press CONTROL + SHIFT + F8 to select the entire database.

Selecting on the Form Screen

Unlike it does on the List screen, Works always considers the displayed record on the Form screen to be selected. You don't need to use a command to select the entire record before choosing commands such as Move.

In addition, you can select any field on the form by moving the highlight to it.

To select a field on the Form screen

- Use the DIRECTION keys to move the highlight to the field you want to select.

Selecting on the Form Design Screen

On the Form Design screen, you can select a field or label. After a selection is made, the highlight extends to cover the entire field or label. Selected fields can be edited, moved, deleted, widened, or narrowed; or the field name can be hidden. Selected labels can be edited, moved, or deleted.

To select a field or label on the Form Design screen

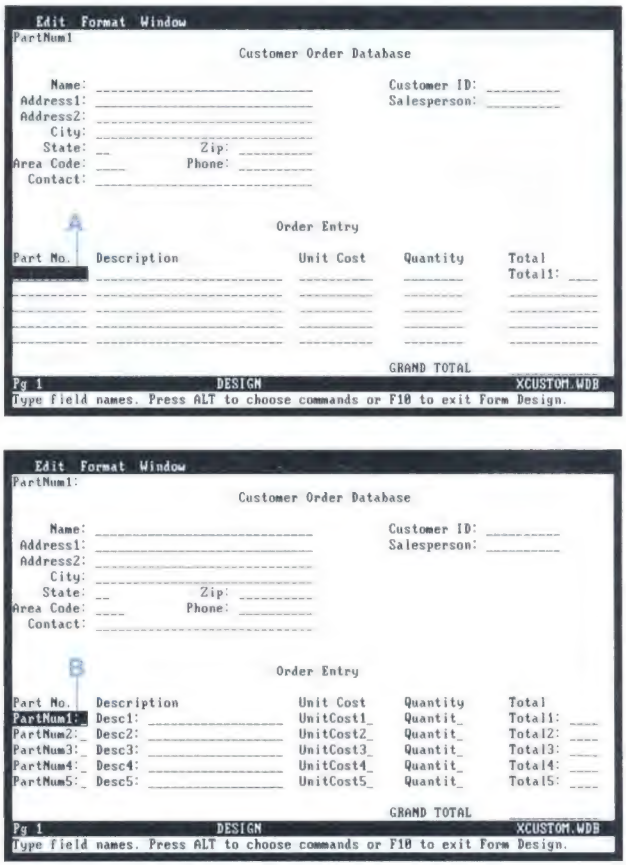
- Use the DIRECTION keys to move the highlight to the field you want to select.

Show All Records Command (Query Menu) (List, Form)

The Show All Records command displays all records in the database, bringing all hidden records into view. You can use this command after a query or after hiding records to re-display all the records in your database.

For information on how to query the database, see "Querying" in this chapter. For information on hiding records, see "Hiding" in this chapter.

Show Field Name Command (Format Menu) (Form Design)



A Field names hidden

B Field names re-displayed

On the Form Design screen, the Show Field Name command lets you hide or display the selected field's field name. If the selected field's name is displayed, a mark appears next to the Show Field Name command on the Format menu. If the field name is hidden, the mark is hidden also.

When you hide a field name, the width of the cell expands to include the space occupied by the field name. This is a nice option whenever you want to have several fields in a column named by a label. Each hidden field name, however, must be unique.

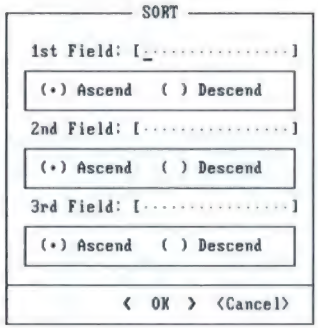
To hide or show a field name
(Form Design screen)

- From the Format menu, choose Show Field Name.

Tip To avoid choosing the same width and move commands twice, it is often best to move fields and change their width after you hide the field names.

Sort Command (Query Menu)
(List, Form)

Works can sort all database records in either ascending or descending order. You can specify up to three fields for Works to use when sorting.

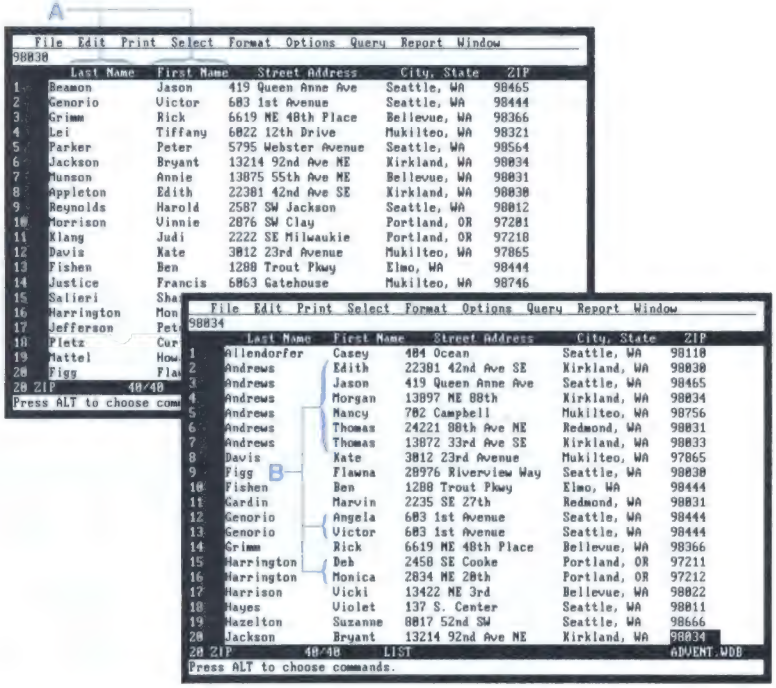


1st Field, 2nd Field, 3rd Field Displays the field names in the order you want them sorted. When Works finds two cells in the 1st field that are the same, it looks in the 2nd field to see which one goes first. If the 2nd field cells are also the same, it looks to the 3rd field to see which one goes first. This continues until the database is sorted.

Ascending/Descending Sorts the field in the selected order. Generally, ascending order sorts in the following order: text, NA values, numbers, ERR values, and blanks. Text includes the following characters shown in ascending sort order (from left to right):

Character Type	Characters
Special characters	space ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~
Numeric characters	0 1 2 3 4 5 6 7 8 9
Alphabetic characters	a A b B thru z Z

Descending order is the opposite of ascending order. Works sorts text in strict alphabetical order, without respect to upper or lower case.


A
File Edit Print Select Format Options Query Report Window
98830
Last Name First Name Street Address City, State ZIP
1 Beamon Jason 419 Queen Anne Ave Seattle, WA 98465
2 Genorio Victor 683 1st Avenue Seattle, WA 98444
3 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
4 Lei Tiffany 6822 12th Drive Mukilteo, WA 98321
5 Parker Peter 5795 Webster Avenue Seattle, WA 98564
6 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
7 Munson Annie 13875 55th Ave NE Bellevue, WA 98031
8 Appleton Edith 22381 42nd Ave SE Kirkland, WA 98030
9 Reynolds Harold 2587 SW Jackson Seattle, WA 98012
10 Morrison Vinnie 2876 SW Clay Portland, OR 97201
11 Klang Judi 2222 SE Milwaukie Portland, OR 97210
12 Davis Kate 3812 23rd Avenue Mukilteo, WA 97865
13 Fishen Ben 1288 Trout Pkwy Elmo, WA 98444
14 Justice Francis 6863 Gatehouse Mukilteo, WA 98746
15 Salieri Sha
16 Harrington Mon
17 Jefferson Pet
18 Fletz Cur
19 Mattel How
20 Figg Fla
20 ZIP 48/48
Press ALT to choose com
File Edit Print Select Format Options Query Report Window
98834
Last Name First Name Street Address City, State ZIP
1 Allendorfer Casey 484 Ocean Seattle, WA 98118
2 Andrews Edith 22381 42nd Ave SE Kirkland, WA 98030
3 Andrews Jason 419 Queen Anne Ave Seattle, WA 98465
4 Andrews Morgan 13897 NE 88th Kirkland, WA 98034
5 Andrews Nancy 782 Campbell Mukilteo, WA 98756
6 Andrews Thomas 24221 88th Ave NE Redmond, WA 98031
7 Andrews Thomas 13872 33rd Ave SE Kirkland, WA 98033
8 Davis Kate 3812 23rd Avenue Mukilteo, WA 97865
9 Figg Flawna 28976 Riverview Way Seattle, WA 98030
10 Fishen Ben 1288 Trout Pkwy Elmo, WA 98444
11 Gardin Marvin 2235 SE 27th Redmond, WA 98031
12 Genorio Angela 683 1st Avenue Seattle, WA 98444
13 Genorio Victor 683 1st Avenue Seattle, WA 98444
14 Grimm Rick 6619 NE 48th Place Bellevue, WA 98366
15 Harrington Deb 2458 SE Cooke Portland, OR 97211
16 Harrington Monica 2834 NE 28th Portland, OR 97212
17 Harrison Vicki 13422 NE 3rd Bellevue, WA 98022
18 Hayes Violet 137 S. Center Seattle, WA 98011
19 Hazelton Suzanne 8817 52nd SW Seattle, WA 98666
20 Jackson Bryant 13214 92nd Ave NE Kirkland, WA 98034
20 ZIP 48/48 LIST ADVENT.WDB
Press ALT to choose commands.
B

A The fields you want to sort are called *key fields*.

B *First Name* is the second key field. First names for each unique last name are sorted alphabetically, as in a phone book.

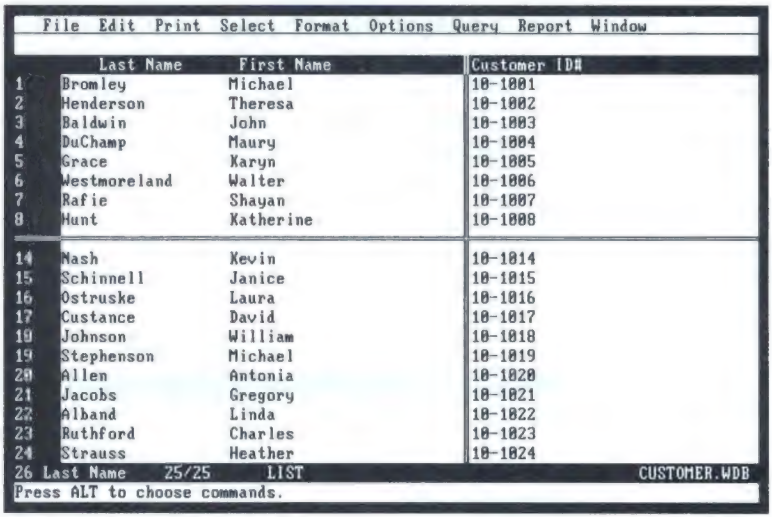
The fields whose information is sorted (1st field, 2nd field, 3rd field) are called *key fields*. The most important field is sorted first. For example, a phone book has three key fields: last name, first name, and middle name. Since a phone book is ordered by last name, the last name is the 1st field to be sorted, followed by first name as the 2nd field, then middle name as the 3rd field.

To specify which fields to sort

1. From the Query menu, choose Sort.
2. In the 1st field text box, type the name of the first field to be sorted.
   The first time you sort your database, Works proposes the first field name as the 1st field. You need to specify key fields only once. Works retains the field names you specify for subsequent sorts.
3. Select either Ascend or Descend.
4. Repeat the previous two steps for the second and third fields to be sorted.
5. Press ENTER to sort the database.

Tip To sort more than three fields, sort the database twice, sorting the least important key fields first. Works will place the fields in the correct order.

Split Command (Options Menu) (List)


File Edit Print Select Format Options Query Report Window
Last Name First Name Customer ID#
1 Bromley Michael 10-1001
2 Henderson Theresa 10-1002
3 Baldwin John 10-1003
4 DuChamp Maury 10-1004
5 Grace Karyn 10-1005
6 Westmoreland Walter 10-1006
7 Rafie Shayan 10-1007
8 Hunt Katherine 10-1008
14 Nash Kevin 10-1014
15 Schinnell Janice 10-1015
16 Ostruske Laura 10-1016
17 Custance David 10-1017
18 Johnson William 10-1018
19 Stephenson Michael 10-1019
20 Allen Antonia 10-1020
21 Jacobs Gregory 10-1021
22 Alband Linda 10-1022
23 Ruthford Charles 10-1023
24 Strauss Heather 10-1024
26 Last Name 25/25 LIST CUSTOMER.WDB
Press ALT to choose commands.

The Split command creates horizontal and vertical lines that divide the work area into two or four smaller work areas called windows. Each window can show a different part of the database, letting you look at two or four different places at once.

You can divide the work area into side-by-side windows, upper and lower windows, or both at the same time, creating four windows. Adjacent windows scroll together along the direction of the split. For example, as you scroll down the database, the rows in side-by-side windows scroll upward together. Similarly, as you scroll to the right, upper and lower windows scroll to the right together.

To create windows on the List screen

1. From the Options menu, choose Split.

   The status line shows SPLIT.
2. Press the UP or DOWN keys to move the horizontal split to where you want it. Press the LEFT or RIGHT keys to move the vertical split to where you want it.
3. Press ENTER.

To move or remove a split on the List screen

1. From the Options menu, choose Split.
2. Press the LEFT or RIGHT keys to move the vertical split to where you want it. Press the UP or DOWN keys to move the horizontal split to where you want it.

   To remove a split, use the DIRECTION keys to move the split out of the work area.
3. Press ENTER.

Status Line

A Record number
B Field Name
C Displayed records/Total records
D Type of screen
E Edit or point mode indicator
F Extend selection indicator
G Number Lock indicator
H Caps Lock indicator
I Active file's name

The status line is the upper of the two lines across the bottom of the screen. It displays information about what you are seeing and doing as you use the database.

- On the List, Form, and Query screens, it displays the record number and field name where the active cell is located.
- On the Form Design screen, it displays the current screen number for the form.

Last Name On the List and Form screens, it displays the field name where the active cell is located.

13/50 On the List and Form screens, it displays the number of displayed and total records.

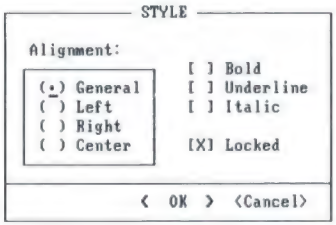
List Displays the name of the current screen: List, Form, Form Design, or Query.

Point

- On the List screen, it displays MOVE, COPY, or SPLIT whenever the respective command is in progress. It also displays EDIT or POINT while you are editing a field formula.
- On the Form screen, it displays MOVE or COPY whenever the respective command is in progress. It also displays EDIT or POINT while you are editing a field formula.

Style Command (Format Menu) (List, Form, Report)

The Style command aligns, applies styles to, and locks or unlocks the selected fields.



Alignment Changes the position of a displayed cell's contents. The default is General alignment where text is left-aligned and numbers, ERRs and NAs are right-aligned.

Bold, Underline, Italic Applies these styles to the selected cells. All characters appear bold on the screen regardless of which of the three styles is applied.

Locked Prevents the contents or format of a cell from being changed when protection is turned on. Unlock the cell to allow the contents and format to be changed when protection is turned on.

For information on aligning values in a field, see "Aligning Values" in this chapter. For information on how to protect cells from changes, see "Protect Command" in this chapter.

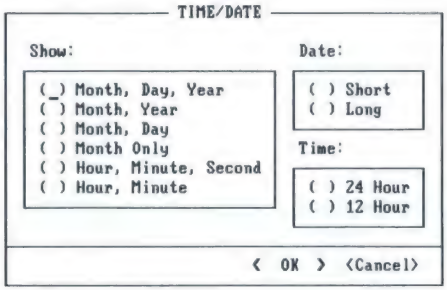
Switch Hidden Records Command (Query Menu) (List, Form)

The Switch Hidden Records command swaps the displayed and hidden records. All displayed records are hidden, and all hidden records are displayed.

For information on when and how to switch hidden records, see "Querying" in this chapter.

Time/Date Command (Format Menu) (List, Form)

The Time/Date command displays numeric values as a date or time.



Show Select an option that describes what parts of the date or time you want to display.

Date If you are formatting a date, select Long to display months in a form similar to Jan or Feb and years in four digits (1988). Select Short to display the date in a form similar to 10/30/88.

Time If you are formatting a time, select 24 Hour to display the time in a form similar to 13:15:45. Select 12 Hour to display the time in a form similar to 1:15 P.M.

For information on how to enter dates and times into the database, see "Entering and Editing" in this chapter. For information on dates and times, see "Dates and Times" in this chapter.

View Form Command (Options Menu) (List)

The View Form command lets you display the database on the Form screen.

To change from the List screen to the Form screen

- From the Options menu, choose View Form.

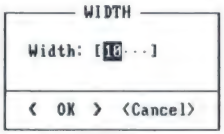
View List Command (Options Menu) (Form)

The View List command lets you display the database on the List screen.

To change from the Form screen to the List screen

- From the Options menu, choose View List.

Width Command (Format Menu) (List, Form Design)



The Width command changes the width of all selected fields. Field widths on the List screen are independent of the field widths on the Form screen. Use the Form Design screen to change the width of cells in a form.

A cell can hold more text than can be displayed. If a cell is not wide enough to display the entire contents of a cell, characters not appearing on the screen will remain in Works memory. Numbers too that are too long to display appear as #######. Fields can be as wide as the screen.

Changing Widths on the List Screen

You need not select the entire field before you change its width. If any cell in a field is selected, the new column width applies to all cells in that field.

When you first create a database, each field is 10 characters wide. Field widths can vary from 0 (a hidden field) to as wide as the screen. The Width command affects all fields in the selection. To adjust all 256 fields, select an entire record before setting the width.

To change width on the List screen

1. Select at least one cell in each field you want to change.
2. From the Format menu, choose Width.
3. In the Width text box, type the width in number of characters.
4. Press ENTER.

To re-display a hidden field on the List screen

1. From the Select menu, choose Go To.
2. In the Fields list box, select the field name you want to re-display.
3. Press ENTER.
4. From the Format menu, choose Width.
5. In the Width text box, enter a width greater than 0.
6. Press ENTER.

Changing Field Widths on the Form Design Screen

When you first create a field on the Form Design screen, the cell is 10 characters wide. You can use the Width command to widen it. Note that the width in the dialog box reflects the combined width of the field name and the data portion.

When you hide a field name using the Show Field Name command on the Form Design screen, the cell width expands to include the space occupied by the field name. You cannot hide cells on the Form Design screen.

To change a field width on the Form Design screen

1. Select the field you want to widen.
2. From the Format menu, choose Width.
3. In the Width text box, enter a width greater than 0.
4. Press ENTER.

12 Introduction to Reporting

Reporting presents database records grouped and sorted in a printed document complete with summarizing statistics and explanatory text. You can print a report as a document or view it on the screen.

Reporting is a quick and interactive process. Works uses the current information displayed in the database for the report. You can print or view reports by simply selecting a command. This makes it easy to update reports quickly to see the effect of your changes.

In this chapter you will learn about reports and how to create them. There are three topics:

- Looking at report definitions and reports
- Creating and viewing a report
- Printing a report

Looking at Report Definitions and Reports

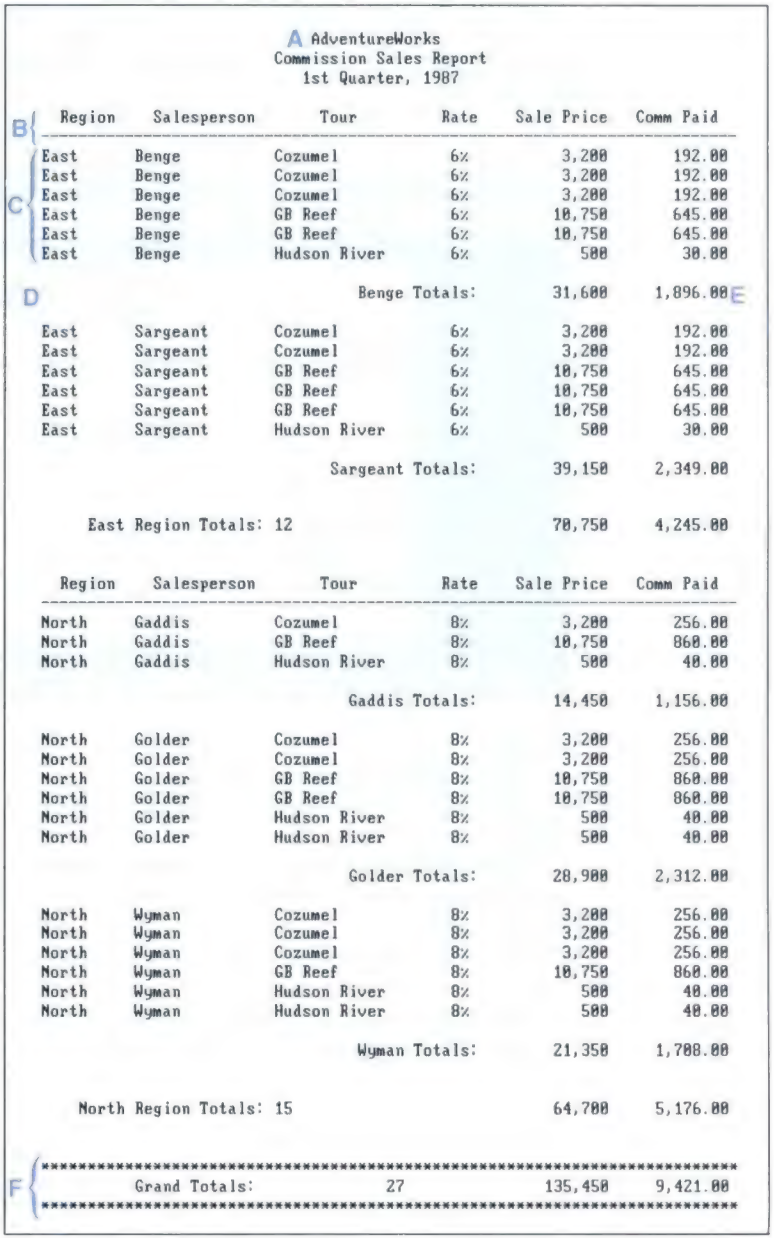
A report presents database records grouped and sorted, and ready to be printed in a document, complete with summarizing statistics and explanatory text.

To produce a report, you first create a report definition. A report definition tells Works what information will be in the report, and where it will be positioned.

Each row in a report is described by a row in its report definition. Works labels each row with a row type. Row types determine the order in which rows are printed in the report. The row types, and the order in which they appear in a report, are shown below:

Row type	**Prints**
Intr Report	At the beginning of a report
Intr Page	At the top of each page
Intr *1st breakfield*	At the beginning of each group created by the 1st breakfield
Intr *2nd breakfield*	At the beginning of each group created by the 2nd breakfield
Intr *3rd breakfield*	At the beginning of each group created by the 3rd breakfield
Record	Each record displayed in the database
Summ *3rd breakfield*	At the end of each group created by the 3rd breakfield
Summ *2nd breakfield*	At the end of each group created by the 2nd breakfield
Summ *1st breakfield*	At the end of each group created by the 1st breakfield
Summ Report	At the end of a report

Works places information in columns in the same order as row types appear in the report definition.



A AdventureWorks
Commission Sales Report
1st Quarter, 1987

B

Region	Salesperson	Tour	Rate	Sale Price	Comm Paid
C East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	Hudson River	6%	500	30.00
D		Benge Totals:		31,600	1,896.00 E
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	Hudson River	6%	500	30.00
		Sargeant Totals:		39,150	2,349.00
East Region Totals:	12			70,750	4,245.00

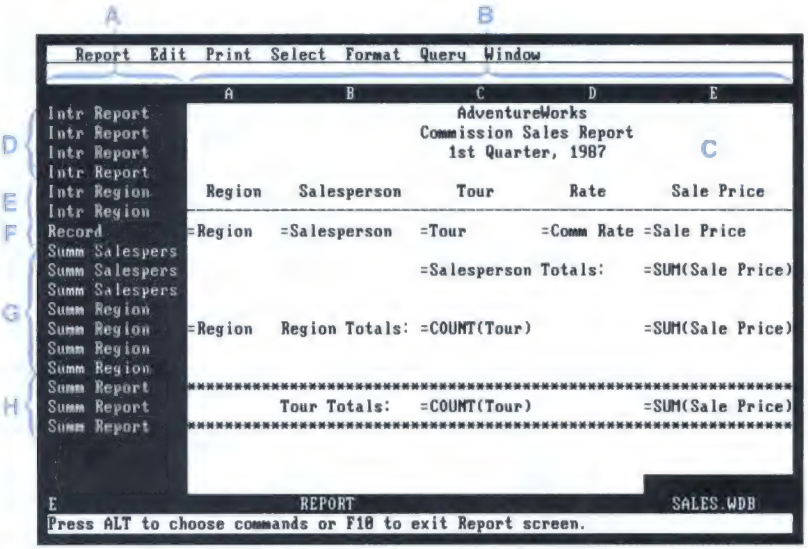
Region	Salesperson	Tour	Rate	Sale Price	Comm Paid
North	Gaddis	Cozumel	8%	3,200	256.00
North	Gaddis	GB Reef	8%	10,750	860.00
North	Gaddis	Hudson River	8%	500	40.00
		Gaddis Totals:		14,450	1,156.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	Hudson River	8%	500	40.00
North	Golder	Hudson River	8%	500	40.00
		Golder Totals:		28,900	2,312.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	GB Reef	8%	10,750	860.00
North	Wyman	Hudson River	8%	500	40.00
North	Wyman	Hudson River	8%	500	40.00
		Wyman Totals:		21,350	1,708.00
North Region Totals:	15			64,700	5,176.00

F

Grand Totals:		27		135,450	9,421.00

A Intr Report rows
B Intr Breakfield rows
C Record rows
D A break creates a gap in the report.
E Summ Breakfield row
F Summ Report row

You create a report definition on the Report screen. The left side of the screen displays the row types. The work area is divided into columns and rows that intersect to form cells. Each cell holds the formulas and text that make up the report definition.



A Row

B Column labels name each column.

C Work area contains the text, numbers, and formulas that create a report.

D Information in Intr Report rows prints at the beginning of a report.

E Information in Intr Breakfield rows prints after a break created by the Breakfield.

F Formulas in Record rows supply the database information for a report.

G Information in Summ Breakfield rows prints before the next break.

H Information in Summ Report rows prints at the end of a report.

Creating and Viewing a Report

Speed Reporting lets you create a report quickly by presenting you with a report definition. Once the report definition is applied, you can view the report, change the report definition, or sort the database. The New command on the Report menu lets you use Speed Reporting. (The Define command lets you look at the definition of the active report.)

To use Speed Reporting

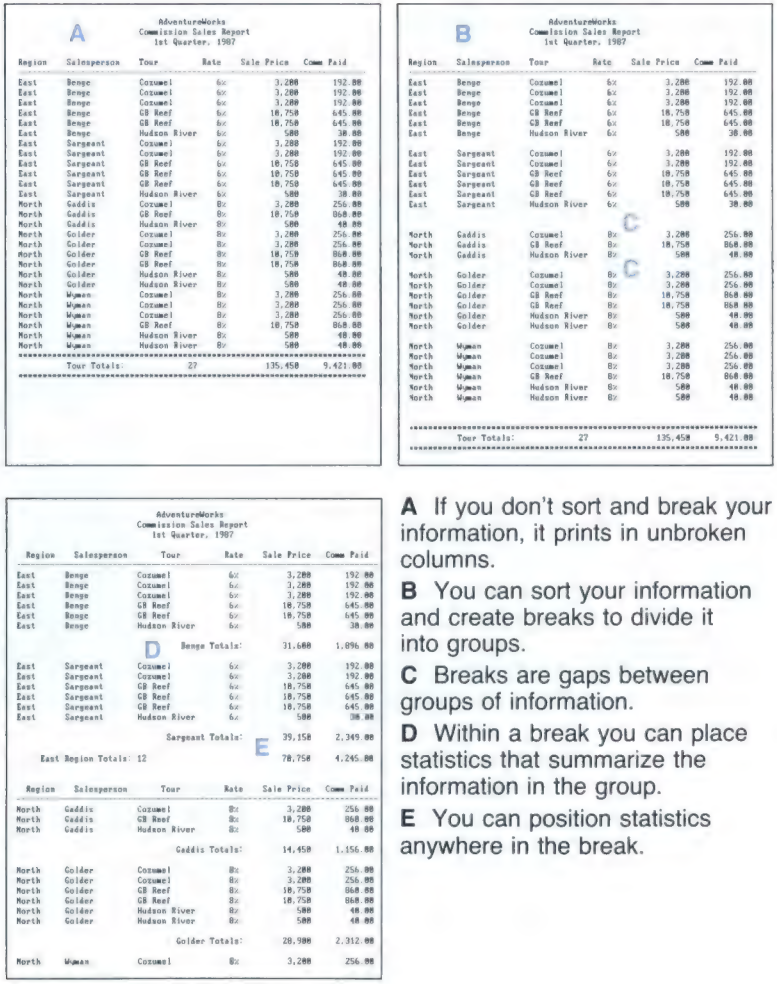
1. From the Report menu, choose New.
2. From the Report menu, choose View.

Sorting Records

The Query menu's Sort command sorts all records in a report before you print or view it. You can sort the records in either ascending (A–Z, 1–9) or descending (9–1, Z–A) order. If you don't specify which fields should be sorted (sortfields), Works uses the first field in your database as a sortfield. Works sorts the database before you print or view it.

Works can sort up to three fields at once. When it finds two cells in the first field that are identical, it looks in the second field to see which one goes first. If the second field cells are identical, it looks in the third field to see which one goes first. This continues until the database is sorted.

The most important field should be the first field. For example, in a phone book the last name is most important, so it is sorted first. Then, when there are two or more identical last names, the first names are sorted. Finally, the middle name is sorted, yielding a properly sorted list of names.



A

AdventureWorks
Commission Sales Report
1st Quarter, 1987

Region	Salesperson	Tour	Rate	Sale Price	Comm Paid
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	Hudson River	6%	500	30.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	Hudson River	6%	500	30.00
North	Gaddis	Cozumel	8%	3,200	256.00
North	Gaddis	GB Reef	8%	10,750	860.00
North	Gaddis	Hudson River	8%	500	40.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	Hudson River	8%	500	40.00
North	Golder	Hudson River	8%	500	40.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	GB Reef	8%	10,750	860.00
North	Wyman	Hudson River	8%	500	40.00
North	Wyman	Hudson River	8%	500	40.00
	Tour Totals:	27		135,450	9,421.00

B

AdventureWorks
Commission Sales Report
1st Quarter, 1987

Region	Salesperson	Tour	Rate	Sale Price	Comm Paid
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	Hudson River	6%	500	30.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	Hudson River	6%	500	30.00
North	Gaddis	Cozumel	8%	3,200	256.00
North	Gaddis	GB Reef	8%	10,750	860.00
North	Gaddis	Hudson River	8%	500	40.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	Hudson River	8%	500	40.00
North	Golder	Hudson River	8%	500	40.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	Cozumel	8%	3,200	256.00
North	Wyman	GB Reef	8%	10,750	860.00
North	Wyman	Hudson River	8%	500	40.00
North	Wyman	Hudson River	8%	500	40.00
	Tour Totals:	27		135,450	9,421.00

C

C

AdventureWorks
Commission Sales Report
1st Quarter, 1987

Region	Salesperson	Tour	Rate	Sale Price	Comm Paid
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	Cozumel	6%	3,200	192.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	GB Reef	6%	10,750	645.00
East	Benge	Hudson River	6%	500	30.00
		Benge Totals:		31,600	1,896.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	Cozumel	6%	3,200	192.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	GB Reef	6%	10,750	645.00
East	Sargeant	Hudson River	6%	500	30.00
		Sargeant Totals:		39,150	2,349.00
	East Region Totals:	12		70,750	4,245.00
North	Gaddis	Cozumel	8%	3,200	256.00
North	Gaddis	GB Reef	8%	10,750	860.00
North	Gaddis	Hudson River	8%	500	40.00
		Gaddis Totals:		14,450	1,156.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	Cozumel	8%	3,200	256.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	GB Reef	8%	10,750	860.00
North	Golder	Hudson River	8%	500	40.00
North	Golder	Hudson River	8%	500	40.00
		Golder Totals:		28,900	2,312.00
North	Wyman	Cozumel	8%	3,200	256.00

D

E

A If you don't sort and break your information, it prints in unbroken columns.

B You can sort your information and create breaks to divide it into groups.

C Breaks are gaps between groups of information.

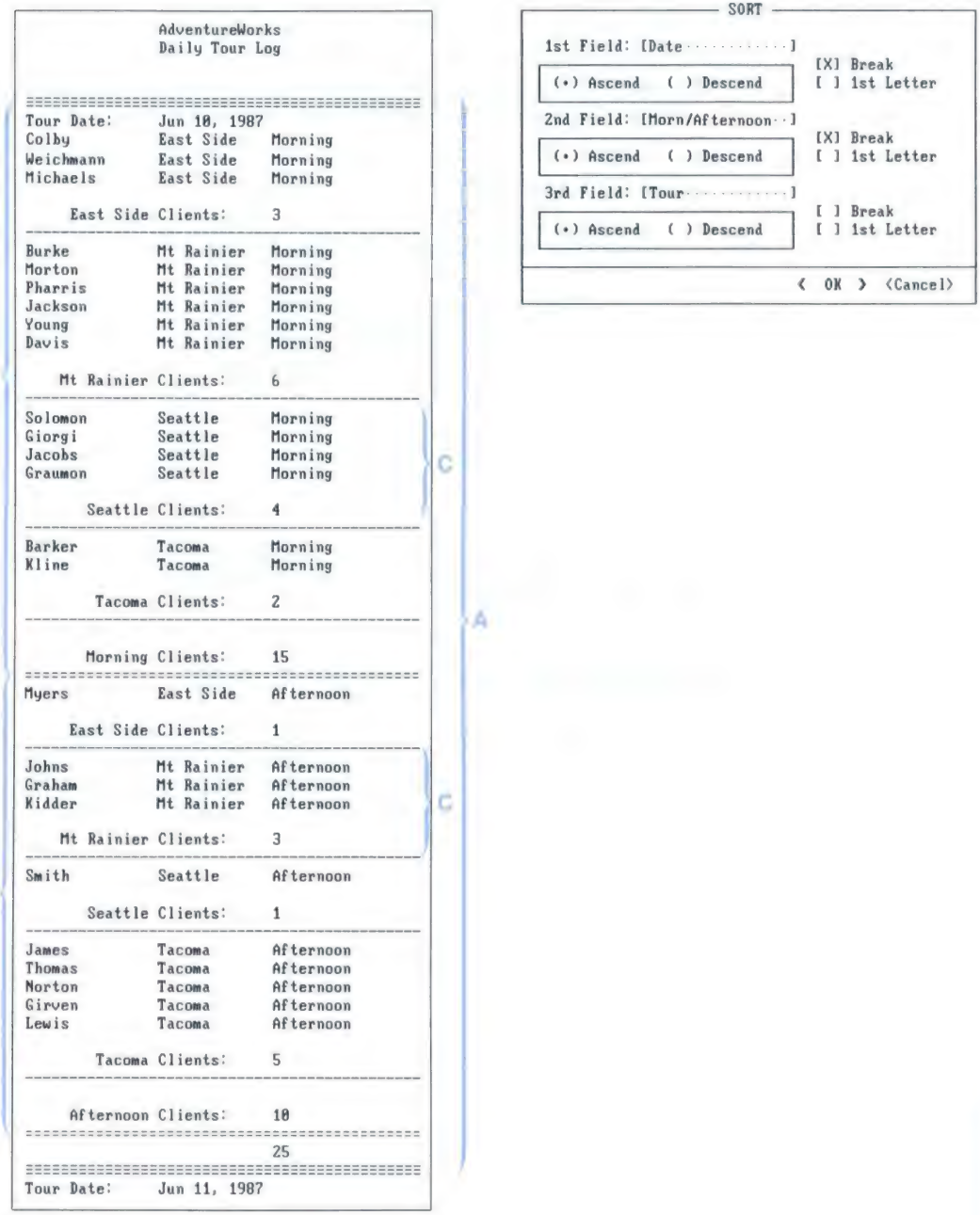
D Within a break you can place statistics that summarize the information in the group.

E You can position statistics anywhere in the break.

Using Breaks

Database records can be broken into smaller groups of records which organize information and make it easier to understand. For example, phone books group all last names beginning with the same letter of the alphabet. A break is a visible space appearing on the screen or in a printed document that separates one group from the next. When you sort the database, Works inserts the breaks. If you like, you can also insert statistics, such as SUM or AVG, that summarize information in the group.

You create a break by telling Works which sortfields should also be breakfields. You have the option of creating a break whenever the content of a breakfield changes, or just when the first letter of the breakfield changes.



```
                AdventureWorks
                Daily Tour Log


==============================================
Tour Date:      Jun 10, 1987
Colby           East Side     Morning
Weichmann       East Side     Morning
Michaels        East Side     Morning

     East Side Clients:       3
----------------------------------------------
Burke           Mt Rainier    Morning
Morton          Mt Rainier    Morning
Pharris         Mt Rainier    Morning
Jackson         Mt Rainier    Morning
Young           Mt Rainier    Morning
Davis           Mt Rainier    Morning

    Mt Rainier Clients:       6
----------------------------------------------
Solomon         Seattle       Morning
Giorgi          Seattle       Morning
Jacobs          Seattle       Morning
Graumon         Seattle       Morning

       Seattle Clients:       4
----------------------------------------------
Barker          Tacoma        Morning
Kline           Tacoma        Morning

       Tacoma Clients:        2
----------------------------------------------

      Morning Clients:        15
==============================================
Myers           East Side     Afternoon

     East Side Clients:       1
----------------------------------------------
Johns           Mt Rainier    Afternoon
Graham          Mt Rainier    Afternoon
Kidder          Mt Rainier    Afternoon

    Mt Rainier Clients:       3
----------------------------------------------
Smith           Seattle       Afternoon

       Seattle Clients:       1
----------------------------------------------
James           Tacoma        Afternoon
Thomas          Tacoma        Afternoon
Norton          Tacoma        Afternoon
Girven          Tacoma        Afternoon
Lewis           Tacoma        Afternoon

       Tacoma Clients:        5
----------------------------------------------

    Afternoon Clients:        10
==============================================
                              25
==============================================
Tour Date:      Jun 11, 1987
```

```
SORT
1st Field: [Date·····]
(•) Ascend  ( ) Descend     [X] Break
                            [ ] 1st Letter
2nd Field: [Morn/Afternoon··]
(•) Ascend  ( ) Descend     [X] Break
                            [ ] 1st Letter
3rd Field: [Tour·····]
(•) Ascend  ( ) Descend     [ ] Break
                            [ ] 1st Letter
                  < OK > <Cancel>
```

A The first breakfield creates the largest groups.
B The second breakfield divides the information into smaller groups.
C The third breakfield creates the smallest divisions in a report.

To sort a report and set up breaks

1. From the Query menu on the Report screen, choose Sort.

   The Sort command in the Report screen may show different settings from the Database's Sort command. Works saves the settings for each report.
2. In the 1st Field text box, type the name of the first sortfield to be sorted.
3. Select either Ascend or Descend sort order.
4. Turn on the Break check box if you want the sortfield also to be a breakfield. Turn the check box off if you don't want the sortfield to be a breakfield.
5. Turn on the 1st Letter check box if you want a break only after the first letter of the breakfield changes. Turn off the check box if you want breaks whenever there is a change in any part of the breakfield.

   The 1st Letter check box works only when you turn on the Break check box.
6. Repeat steps 2 through 5 for the second and third sortfields.
7. Press ENTER.

Works remembers the sortfields and breakfields, and saves them with the report. If you want to change the way your database is sorted, simply edit the sortfields in the Sort dialog box.

Creating Additional Rows for a Report

The content and location of each row in a report is defined by a corresponding row and row type in the report definition. Row types determine where a row is located in a report. You can have any combination or number of row types in a report definition. Works arranges them for you in the following order:

- Intr Report
- Intr Page
- Intr *1st breakfield*
- Intr *2nd breakfield*
- Intr *3rd breakfield*
- Record
- Summ *3rd breakfield*
- Summ *2nd breakfield*
- Summ *1st breakfield*
- Summ Report

The Intr and Summ *breakfield* rows correspond to the breakfields you specify in the Sort dialog box. All sortfields are also breakfields, unless you specify otherwise. Works inserts a Summ row into a report for each sortfield that is also designated as a breakfield. If you turn off the breakfield option for a sortfield, Works removes the related Intro and Summ rows from the report definition.

To create a row

1. On the Report screen, select the blank rows where the new rows will be inserted.
2. From the Edit menu, choose Insert.
3. From the Type list box, select the row type.
4. Press ENTER.

If you try to insert a row type in the wrong row, Works places it in the proper location. Works doesn't allow row types to be out of order.

Entering

Once you've created the rows, you can enter text, numbers, or formulas into the report definition. You enter information in the formula bar just as you do in the database.

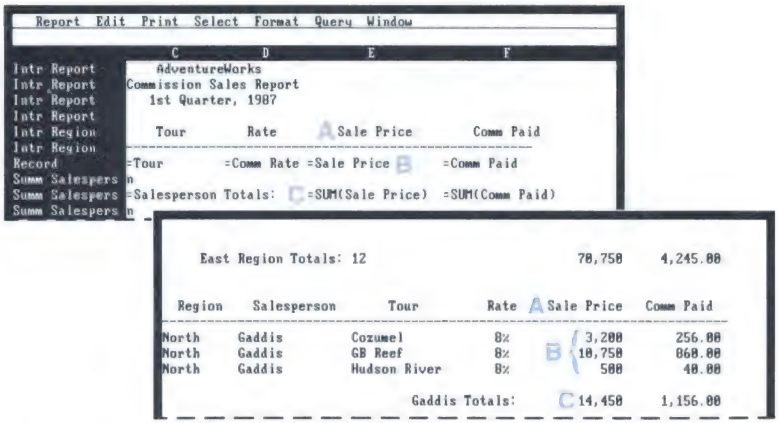
To enter

1. Select the cell.
2. In the formula bar, type the text, number, or formula.
3. Press ENTER.

An alternative to typing field names and formulas into cells is to use the Edit menu's three Field commands: Field Name, Field Value, and Field Summary.

The Field Name command enters a database field name into a cell. You usually place field names in Intr Report rows so they appear at the top of columns in a report, or in Intr Page rows so they appear at the top of each page.

The Field Value command retrieves information from a database cell and puts it into a report. Only displayed records can be included in a report. Records hidden by a query or by the Hide command are excluded. The Field Value command automatically copies both the cell contents and their formats into the report. You usually place field values in Record rows so they appear underneath a column heading.


Report Edit Print Select Format Query Window
C D E F
Intr Report AdventureWorks
Intr Report Commission Sales Report
Intr Report 1st Quarter, 1987
Intr Report
Intr Region Tour Rate A Sale Price Comm Paid
Intr Region
Record =Tour =Comm Rate =Sale Price B =Comm Paid
Summ Salespers n
Summ Salespers =Salesperson Totals: C =SUM(Sale Price) =SUM(Comm Paid)
Summ Salespers n
East Region Totals: 12 78,750 4,245.00
Region Salesperson Tour Rate A Sale Price Comm Paid
North Gaddis Cozumel 8% 3,200 256.00
North Gaddis GB Reef 8% B 10,750 860.00
North Gaddis Hudson River 8% 500 40.00
Gaddis Totals: C 14,450 1,156.00

A The field name formula prints a field name in a report.

B The field value formula prints a value from a database field in a report.

C The field summary formula prints the SUM statistic formula that adds all Sale Price numbers in the group.

To enter a field name or field value formula

1. Select the cell that you want to hold the field name or field value formula.
2. From the Edit menu, choose Field Name to enter a field name. Choose Field Value to enter a formula that retrieves database values and puts them in the report.
3. From the Fields list box, select a field name. Items in the list box are identical for both commands.
4. Press ENTER.

The Field Summary command enters one of seven statistics that summarizes the numbers in a group of Record rows. Most of the time you'll put statistics in Summ rows.

Statistic	Calculates
SUM	Total of the group
AVG	Average of the group
COUNT	Number of items in the group
MAX	Largest number in the group
MIN	Smallest number in the group
STD	Standard deviation of the group
VAR	Variance of the group

What a statistic summarizes depends on the row type. You'll usually enter a statistic in a Summ *breakfield* row to summarize the cells in the preceding group. In a Summ Report row, it summarizes all the cells in an entire report.

To enter a statistic

1. Select the cell where you want to place the statistic.
2. From the Edit menu, choose Field Summary.
3. From the Fields list box, select the field you want to summarize.
4. From the Statistic list box, select the statistic.
5. Press ENTER.

Viewing a Report

Once you've created the rows and entered the contents, you can view the report on the screen.

To view a report

1. From the Report menu, choose View.
2. Press ENTER to view the next screen of the report.

To leave the Report screen

- Press ESCAPE.

Printing a Report

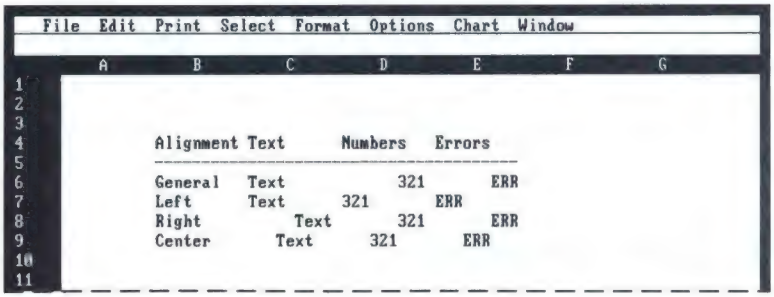
You can print a report on paper.

To print a report

1. From the Print menu on the Report screen, choose Print.
2. Turn on the Print All But Record Rows check box if you want only the Intr and Summ rows from the report to print. Turn off the check box if you want to print the entire report.
3. Press ENTER.

Note All commands described in this Reference will be found on the Report screen.

Aligning Values



The Format menu's Style command positions values within selected cells. Unless you specify another, Works uses General alignment.

To change alignment

1. Select the cells you want to align.
2. From the Format menu, choose Style.
3. From the Style dialog box, select an alignment option.
4. Press ENTER.

Clear Command (Edit Menu)

The Edit menu's Clear command erases the contents of selected cells. Cell formats are unaffected.

For information on	See
Clearing cells	Erasing
Deleting columns and rows	Erasing

Column Command (Select Menu)

Shortcut key: SHIFT + F8

The Select menu's Column command extends the current selection to include entire columns. It is most often used before inserting or deleting columns, or before inserting and deleting vertical page breaks.

For information on	See
Inserting page breaks	Page Breaks and Pagination
Inserting rows or columns	Insert Command
Selecting columns or rows	Selecting

Comma Command (Format Menu)

The Format menu's Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, then 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses.

For information on	See
Using Comma and other formatting commands	Formatting Numbers

Copy Command (Edit Menu)

Shortcut Key: SHIFT + F3

The Edit menu's Copy command makes a copy of the selected cells in other cells in another location. The selected cells' contents and formats replace those of the cells into which you are copying.

To copy cells

1. Select the cells you want to copy.
   To copy an entire column or row, select that column or row.
2. From the Edit menu, choose Copy.

3. Select the cell in the upper-left corner of the area where you want to place the copy.

   If you are copying an entire column or row, select that column or row.

4. Press ENTER.

To repeat the previous Copy command

You can make multiple copies of the selected cells by repeating the previous Copy command. Use this procedure whenever you need to place copies in several parts of a report.

1. Select the cell in the upper-left corner of the area where you want to place the next copy.
2. Press ALT + ENTER.

   You can also press SHIFT + F7.

Copying Reports

You can create variations of an existing report by first copying it and then making changes to it. You can copy a report from either the List, Form, or Report screen. After you copy a report, the copy becomes the active report. Any changes to the copied report do not affect the original report, which is saved as part of the database file.

To copy a report

1. From the Report menu, choose Reports.
2. From the Reports list box, select the report you want to copy.
3. In the Name text box, type the name for the new report.
4. Choose Copy.

Creating a Report

A report presents database records grouped and sorted in a document complete with summarizing statistics and explanatory text. Reports make it easier to analyze and understand database information.

You create a report by preparing a report definition on the Report screen. You can prepare a report from scratch, or have Works prepare the report for you.

For information on how to create a report, see Chapter 12, "Introduction to Reporting."

Dates and Times

You can enter dates or times into cells and use them in formulas. For more information on how to use dates and times, see "Dates and Times" in Chapter 11, "Database Reference."

Define Command (Query Menu)

The Query menu's Define command displays the Query screen, which contains the current query. Use the Query screen to create a new query or to change the current query. You can change a query from either the List, Form, or Report screen.

To display the Query screen

- From the Query menu, choose Define.

To exit the Query screen

- From the Edit menu, choose Exit Query.
  You can also press F10.

For information on how to query your database, see "Querying" in Chapter 11, "Database Reference."

Delete Command (Edit Menu)

The Edit menu's Delete command removes selected columns or rows from the report. To delete a row, select the entire row first. To delete a column, select the entire column first. Deleted information cannot be recovered.

For information on how to delete columns and rows, see "Erasing" in this chapter.

Delete Page Break Command (Print Menu)

The Print menu's Delete Page Break command removes page breaks you inserted with the Insert Page Break command from the same menu. To delete a horizontal page break, select the entire row containing the page break. To delete a vertical page break, select the entire column to the right of the page break first.

For information on	See
Deleting page breaks	Page Breaks and Pagination

Deleting Reports

You can delete a report from the List, Form, or Report screen using the Report menu's Reports command. Each database can have up to eight reports. If you already have eight reports and want to create another report, you must delete an existing report first.

To delete a report

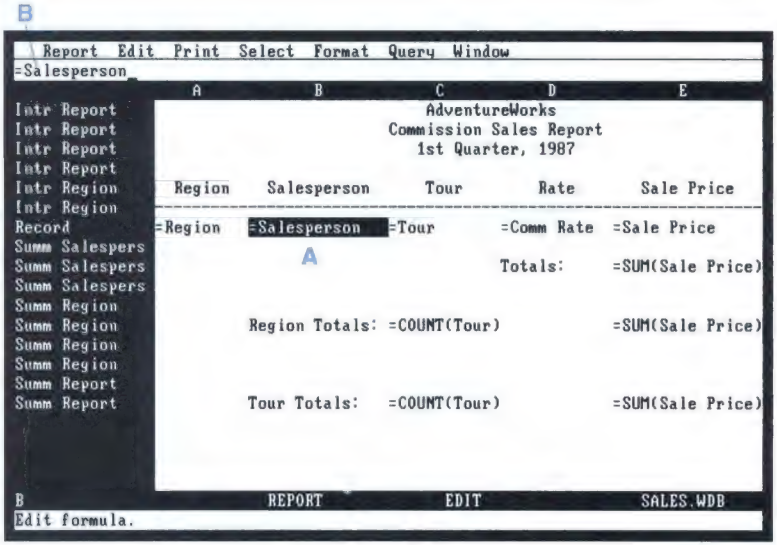
1. From the Report menu, choose Reports.
2. From the Reports list box, select the report you want to delete.
3. Choose Delete.

Dollar Command (Format Menu)

The Format menu's Dollar command formats selected cells by inserting a leading dollar sign ($) and commas every three places (e.g., if you choose two decimal places, 1234567 becomes $1,234,567.00). Negative numbers are enclosed in parentheses.

For information on	See
Using Dollar and other formatting commands	Formatting Numbers

Entering and Editing



A Select the cell you want to edit or enter information into.
B Enter and edit the contents of a cell in the formula bar.

You can enter text, a number, or a formula into a cell on the Report screen, just as you do in the other Database screens. You can also use the three Edit menu commands to enter special formulas into cells. These formulas retrieve information from the database and put it into a report.

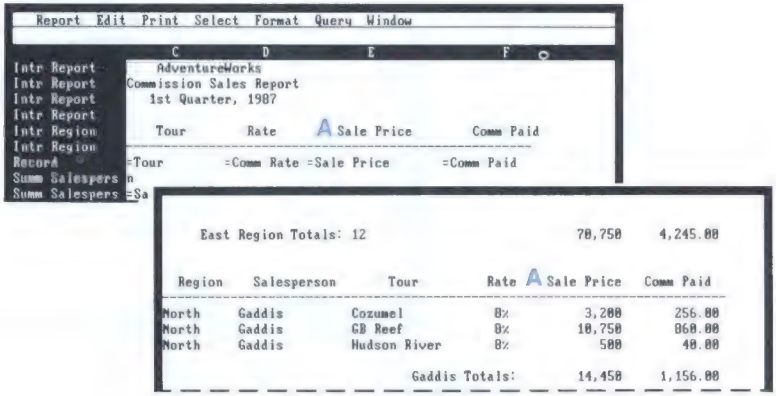
The following sections describe how to use the Edit menu commands to enter formulas into a report. For information on entering and editing text and numbers, see "Entering and Editing" in Chapter 11, "Database Reference."

Placing Formulas in Reports

A formula is an equation that uses database information to create a value for a report. Formulas are built from operators (e.g., + - * /), operands (e.g., numbers or field names), and functions (e.g., SUM(Sales)). For example, =SUM(Sales)/ COUNT(Salesperson) uses a database's Sales and Salesperson fields to compute the average sales per salesperson.

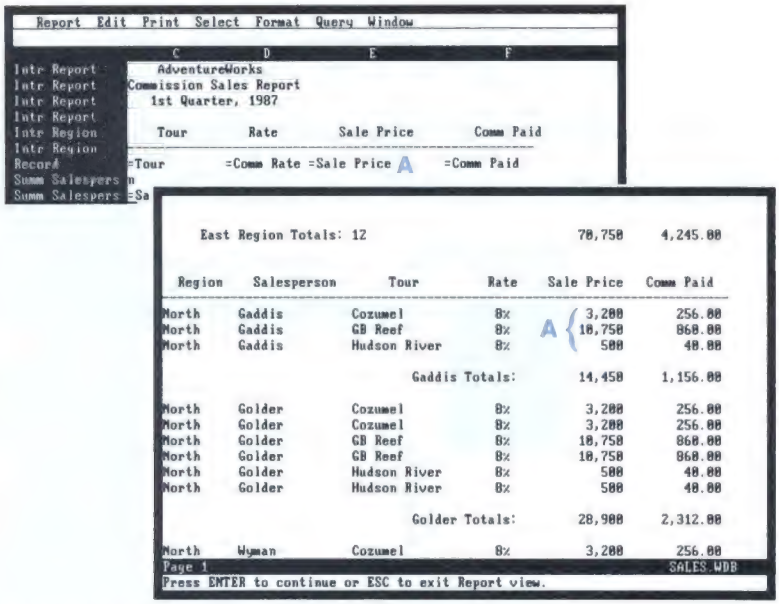
Although you can put formulas anywhere in a report definition, they usually occur in Intr (Introduction) *breakfield,* Record, and Summ (Summary) rows.

In a report, Intr *breakfield* rows are positioned above the database information. The Field Name command is most frequently used for placing field names into the Intr *breakfield* rows. The formula looks just like the field name. For example, if you have a database field entitled "Sales," the formula looks like this:


Report Edit Print Select Format Query Window
C D E F
Intr Report AdventureWorks
Intr Report Commission Sales Report
Intr Report 1st Quarter, 1987
Intr Report
Intr Region Tour Rate A Sale Price Comm Paid
Intr Region
Record =Tour =Comm Rate =Sale Price =Comm Paid
Summ Salespers n
Summ Salespers =Sa
East Region Totals: 12 70,750 4,245.00
Region Salesperson Tour Rate A Sale Price Comm Paid
North Gaddis Cozumel 8% 3,200 256.00
North Gaddis GB Reef 8% 10,750 860.00
North Gaddis Hudson River 8% 500 40.00
Gaddis Totals: 14,450 1,156.00

A The Field Name command enters a field name in the report definition as text. Works prints the field name in the report.

Record rows come after Intr *breakfield* rows. They contain the formulas that retrieve information from the database fields and put them in the report. You can use the Field Value command on the Edit menu to specify which field you need. For example, the formula for retrieving the Sales field's information looks like this:

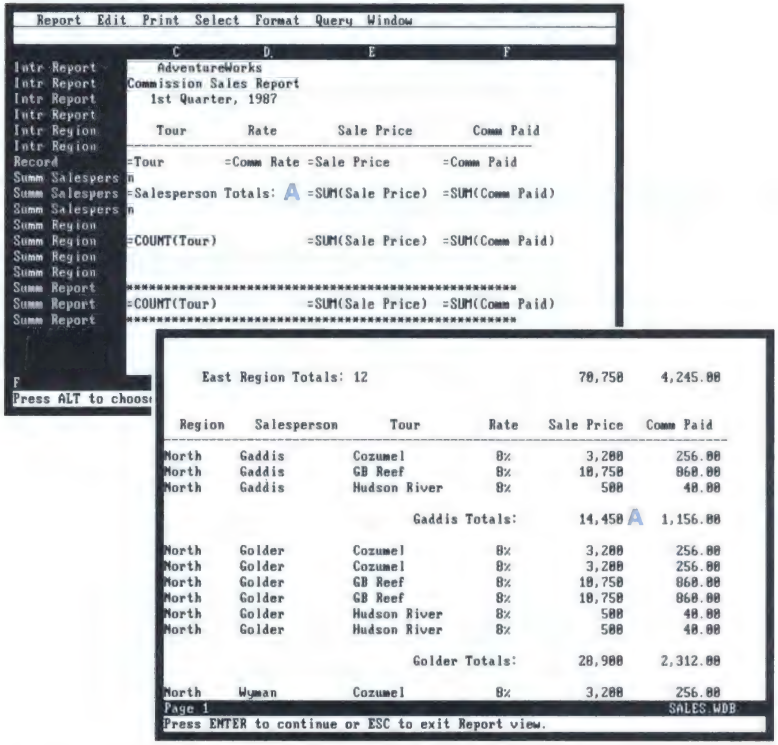

Report Edit Print Select Format Query Window
C D E F
Intr Report AdventureWorks
Intr Report Commission Sales Report
Intr Report 1st Quarter, 1987
Intr Report
Intr Region Tour Rate Sale Price Comm Paid
Intr Region
Record =Tour =Comm Rate =Sale Price A =Comm Paid
Summ Salespers n
Summ Salespers =Sa
East Region Totals: 12 78,750 4,245.00
Region Salesperson Tour Rate Sale Price Comm Paid
North Gaddis Cozumel 8% 3,200 256.00
North Gaddis GB Reef 8% A 10,750 860.00
North Gaddis Hudson River 8% 500 40.00
Gaddis Totals: 14,450 1,156.00
North Golder Cozumel 8% 3,200 256.00
North Golder Cozumel 8% 3,200 256.00
North Golder GB Reef 8% 10,750 860.00
North Golder GB Reef 8% 10,750 860.00
North Golder Hudson River 8% 500 40.00
North Golder Hudson River 8% 500 40.00
Golder Totals: 28,900 2,312.00
North Wyman Cozumel 8% 3,200 256.00
Page 1 SALES.WDB
Press ENTER to continue or ESC to exit Report view.

A The Field Value command enters a field value formula in the report definition. The formula tells Works to get all values from the database field for the current group.

Summ rows come after Record rows. They contain the formulas that calculate statistics from the information in the preceding group of records and print them in the report. You can use the Field Summary command to specify which field and statistic you need. Seven statistics are available:

Statistic	Calculates
SUM	Total of the group
AVG	Average of the group
COUNT	Number of items in the group
MAX	Largest number in the group
MIN	Smallest number in the group
STD	Standard deviation of the group
VAR	Variance of the group

For example, the formula for calculating total Sales looks like this:


Report Edit Print Select Format Query Window
C D E F
Intr Report AdventureWorks
Intr Report Commission Sales Report
Intr Report 1st Quarter, 1987
Intr Report
Intr Region Tour Rate Sale Price Comm Paid
Intr Region
Record =Tour =Comm Rate =Sale Price =Comm Paid
Summ Salespers n
Summ Salespers =Salesperson Totals: A =SUM(Sale Price) =SUM(Comm Paid)
Summ Salespers n
Summ Region
Summ Region =COUNT(Tour) =SUM(Sale Price) =SUM(Comm Paid)
Summ Region
Summ Region
Summ Report
Summ Report =COUNT(Tour) =SUM(Sale Price) =SUM(Comm Paid)
Summ Report
F
Press ALT to choos
East Region Totals: 12 70,750 4,245.00
Region Salesperson Tour Rate Sale Price Comm Paid
North Gaddis Cozumel 8% 3,200 256.00
North Gaddis GB Reef 8% 10,750 860.00
North Gaddis Hudson River 8% 500 40.00
Gaddis Totals: 14,450 A 1,156.00
North Golder Cozumel 8% 3,200 256.00
North Golder Cozumel 8% 3,200 256.00
North Golder GB Reef 8% 10,750 860.00
North Golder GB Reef 8% 10,750 860.00
North Golder Hudson River 8% 500 40.00
North Golder Hudson River 8% 500 40.00
Golder Totals: 28,900 2,312.00
North Wyman Cozumel 8% 3,200 256.00
Page 1 SALES.WDB
Press ENTER to continue or ESC to exit Report view.

A The Field Summary command enters a formula that includes a field summary statistic. The SUM statistic adds all numbers in the group.

Entering Formulas

You can enter a formula in each report cell either by typing it in the formula bar, or by using one of the Edit menu commands.

To enter a formula using the formula bar

1. Select the cell into which you want to enter the formula.
2. In the formula bar, type an equal sign (=), followed by the rest of the formula.
3. Press ENTER.

To enter a field name or field value in a report

1. Select the cell into which you want to enter the formula.
2. From the Edit menu, choose Field Name to enter a field name. Choose Field Value to enter a value.
3. From the Fields list box, select the field name.
4. Press ENTER.

To enter a summary statistic in a report

1. Select the cell into which you want to enter the formula.
2. From the Edit menu, choose Field Summary.
3. From the Fields list box, select the field name you want to summarize.
4. From the Statistic list box, select the statistic.
5. Press ENTER.

Erasing

Works has two ways of erasing the contents from cells: clearing and deleting. Clearing erases the contents of the selection, leaving the cells empty while retaining their formats. Deleting removes entire rows or columns of cells from the report, including their formats. Cleared or deleted information cannot be recovered.

Clearing

The Edit menu's Clear command erases the contents of the selection. The cell and its format remain in the report. Any new number or formula typed into the cell would be displayed in the previous format.

You can also use the BACKSPACE key to erase all or part of a cell's contents. Each time you press BACKSPACE, Works erases the character to the left of the cursor.

To clear cells using the Clear command

1. Select the cells you want to clear.
2. From the Edit menu, choose Clear.

To clear a cell using BACKSPACE

1. Select the cell you want to clear.
2. Press BACKSPACE.
3. Press ENTER.

Deleting

The Edit menu's Delete command removes entire selected columns or rows from the report. Delete removes the selected records or fields from the database. You need to select entire records or fields before you use the Delete command.

When you delete one or more columns, the columns to the right of the deleted columns shift to the left into the vacated columns. Likewise, the rows below the deleted rows shift upward into the vacated rows.

To delete rows or columns

1. Select the rows or columns you want to delete.
2. From the Edit menu, choose Delete.

For information on	See
Inserting rows or columns	Insert Command
Selecting columns or rows	Selecting

Exit Report Command (Report Menu)

Shortcut key: F10

The Report menu's Exit Report command leaves the Report screen and returns you to the List or Form screen. The current report is retained and will be saved with the database.

To return to the database

- From the Report menu, choose Exit Report.

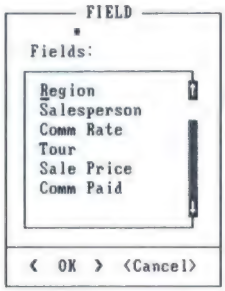
Exponential Command (Format Menu)

The Format menu's Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, then 1234567 becomes 1.23E+06). The exponent can range from -306 to +305.

For information on	See
Using Exponential and other formatting commands	Formatting Numbers

Field Name Command (Edit Menu)

The Edit menu's Field Name command enters a database field name into the selected cell. Using this command is a fast and accurate way of typing field names.

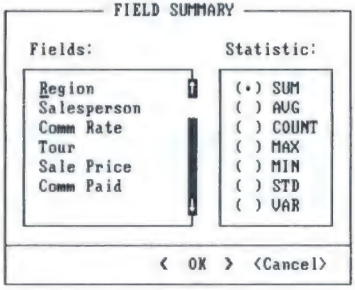


Fields List Box The list box shows the name of each field in the current database. Select the name of the field you want in the report.

For information on using the Field Name command, see "Entering and Editing" in this chapter.

Field Summary Command (Edit Menu)

The Edit menu's Field Summary command enters one of seven statistical formulas into the selected cell. Field Summary is a fast and accurate way of typing the statistical formulas. You can use the statistical formulas to analyze groups of information printed in the report.



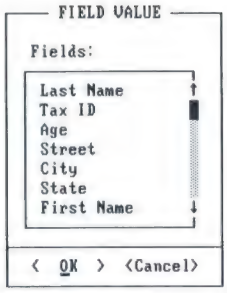
Fields List Box Shows the name of each field in the current database. Select the name of the field you want to summarize.

Statistic Shows all the available reporting statistics. Select the statistic you want to use with the selected field name.

For information on using the Field Summary command, see "Entering and Editing" in this chapter.

Field Value Command (Edit Menu)

The Edit menu's Field Value command creates a formula that retrieves information (values) from database fields and puts it into a report. Using this command is a fast and accurate way of typing these formulas.



Fields List Box Shows the name of each field in the current database. Select the name of the field whose contents you want to include in the report.

For information on using the Field Value command, see "Entering and Editing" in this chapter.

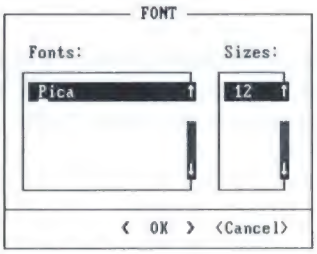
Fixed Command (Format Menu)

The Format menu's Fixed command formats selected cells by showing and rounding off to the specified number of decimal places (e.g., if you choose two decimal places, then 1234.568 becomes 1234.57).

For information on	See
Using Fixed and other formatting commands	Formatting Numbers

Font Command (Print Menu)

The Print menu's Font command selects the font and font size to use when printing the report. Only the fonts and font sizes your printer can produce are shown in the list boxes. Fonts do not appear on the screen, but Works will print the entire report using the selected font and font size.



Fonts Select the font you want to use for printing the report.

Sizes Select the font size you want to use for printing the report.

To select font and font size

1. From the Print menu, choose Font.
2. From the Fonts list box, select a font.
3. From the Sizes list box, select a font size.
4. Press ENTER.

For information on	See
Using fonts and font sizes for your printer	Appendix B, "Printing, Fonts, and Styles"

Formatting Numbers

You can use the Format menu's seven format commands to change the appearance of numeric values in cells.

File Edit Print Select Format Options Chart Window

	A	B	C	D	E	F
1						
2		Format	Two Decimals	Three Decimals		
3						
4		General	1234567.89	0		
5		Fixed	1234567.89	0.000		
6		Dollar	$1,234,567.89	$0.000		
7		Comma	1,234,567.89	0.000		
8		Percent	123456789.00%	0.000%		
9		Exponential	1.23E+06	0.000E+00		
10		Logical	TRUE	FALSE		
11						

General Format

Cells initially display numeric values in General format. The General command formats selected cells as precisely as possible, using an integer (123), decimal fraction (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

Fixed Format

The Fixed command formats selected cells by showing the specified number of decimal places (e.g., if you choose two decimal places, then 1234.563 becomes 1234.56).

Dollar Format

The Dollar command formats selected cells by inserting a leading dollar sign ($) and commas every three places (e.g., if you choose two decimal places, then 1234567 becomes $1,234,567.00). Negative numbers are enclosed in parentheses.

Comma Format

The Comma command formats selected cells by inserting commas every three places (e.g., if you choose two decimal places, then 1234567 becomes 1,234,567.00). Negative numbers are enclosed in parentheses.

Percent Format

The Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, then .43 becomes 43.00%). Negative percentages are preceded by a minus sign (−).

Exponential Format

The Exponential command formats selected cells in exponential (scientific) notation (e.g., if you choose two decimal places, then 1234567 becomes 1.23E+06). The exponent can range from -306 to +305.

Logical Format

The Logical command formats selected cells to display either TRUE or FALSE in place of numeric values. A cell whose value is zero displays FALSE. All non-zero cells show TRUE.

To format cells

1. Select the cells you want to format.
2. From the Format menu, choose the appropriate Format command.

   Choose one of Works format commands: General, Fixed, Dollar, Comma, Percent, Exponential, or Logical.
3. Type the number of decimals you want.

   Skip this step if you are using the General or Logical format command.
4. Press ENTER.

Formulas

A formula is an equation you enter into a cell on the Report screen that takes database information and calculates a value to be presented in a report.

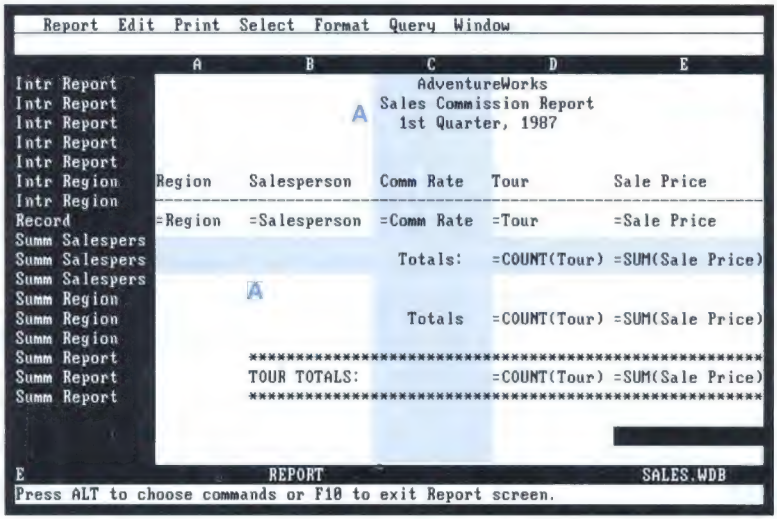
For information on entering and using formulas, see "Entering and Editing." For information on how Works evaluates formulas, see "Formulas" in Chapter 11, "Database Reference."

General Command (Format Menu)

The Format menu's General command formats selected cells as precisely as possible, using an integer (123), decimal fraction (1.23), or scientific notation (1.23E+75) if the number is too small or large to fit in the cell.

For information on	See
Using General and other formatting commands	Formatting Numbers

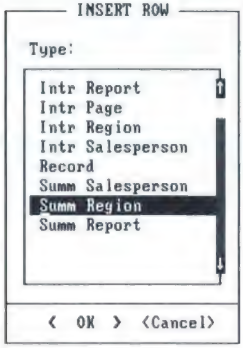
Insert Command (Edit Menu)



A You must select the entire column or row before using the Insert command. Inserted columns and rows appear in the selection.

The Edit menu's Insert command adds rows or columns between existing rows or columns. You must select at least one row or column before you use this command. Works inserts as many rows or columns as you have selected.

When you insert new rows, Works displays a dialog box showing the available row types. Works arranges row types in the proper order for you.



Types Displays all row types available for the active report.

To insert rows

1. Select the row just below where you want the new rows to be located.
2. From the Edit menu, choose Insert.
3. In the Type list box, select a row type.
4. Press ENTER.

For information on	See
Deleting rows or columns	Erasing
Moving rows and columns	Move Command
Selecting entire rows or columns	Selecting

Insert Page Break Command (Print Menu)

The Print menu's Insert Page Break command inserts a page break above the selected row, or to the left of the selected column. A page break indicates the first row or column of the new page.

For information on using page breaks, see "Page Breaks and Pagination" in this chapter.

For information on	See
Deleting page breaks	Delete Page Break Command

Keyboard

The following tables show what keys to press to perform various tasks with Works. For some tasks you use key combinations, pressing the first key, then pressing the next key. These key combinations are shown like this: SHIFT + F3. Many of the keys you press are shortcut keys for commands on the menu.

List and Report Screen Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Select row	CONTROL + F8
Select column	SHIFT + F8
Select database	SHIFT + CONTROL + F8
Switch between Form/List	F9
Exit Reporting	F10
View Report	SHIFT + F10

Form Screen Function Keys

Name	Press
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7

To move around a file or to move the highlight, press the appropriate movement keys. To select cells and extend the selection, move to the cell you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys. To collapse a selection, press ESCAPE.

List and Report Screen Movement and Selecting Keys

To move	Press
Left one cell	LEFT
Right one cell	RIGHT
Up one cell	UP
Down one cell	DOWN
Left one cell in range	SHIFT + TAB
Right one cell in range	TAB
Up one cell in range	SHIFT + ENTER
Down one cell in range	ENTER
One block left	CONTROL + LEFT
One block right	CONTROL + RIGHT
One block up	CONTROL + UP
One block down	CONTROL + DOWN
One screen left	CONTROL + PAGE UP
One screen right	CONTROL + PAGE DOWN
One screen up	PAGE UP
One screen down	PAGE DOWN
To beginning of record	HOME
To end of record	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Collapse a selection	ESCAPE

Form Design Screen Movement Keys

To move	Press
Left	LEFT
Right	RIGHT
Up one line	UP
Down one line	DOWN
To beginning of line	HOME
To end of line	END
Next screen	PAGE DOWN
Previous screen	PAGE UP
To beginning of form	CONTROL + HOME
To end of form	CONTROL + END

Form and Query Screen Movement and Selecting Keys

To move to	Press
Previous cell	LEFT or UP
Next cell	RIGHT or DOWN
Previous screen	PAGE UP
Next screen	PAGE DOWN
Previous record	CONTROL + PAGE UP
Next record	CONTROL + PAGE DOWN
Beginning of database	CONTROL + HOME
End of database	CONTROL + END

Special Database Keys

To	Press
Copy cell above (List)	CONTROL + '
Enter current date	CONTROL + ;
Enter current time	SHIFT + CONTROL + ;

Layout Command (Print Menu)

The Print menu's Layout command specifies the margins and page sizes for your printed report.

For information on laying out your report pages, see "Page Layout" in Chapter 2, "Using Basic Skills."

For information on	See
Printing a database	Print Command

Logical Command (Format Menu)

The Format menu's Logical command formats selected cells containing numbers to display either TRUE or FALSE in place of numeric values. A cell whose value is zero displays FALSE. All non-zero cells show TRUE.

For information on	See
Using Logical and other formatting commands	Formatting Numbers

Move Command (Edit Menu)

The Edit menu's Move command moves the contents and formats of selected cells to another part of the report. The selected cells are left blank and the contents of the cells at the new location are replaced with the contents of the moved cells.

To move

1. Select the cells you want to move.
2. From the Edit menu, choose Move.
3. Select the cell in the upper-left corner of the new location.
4. Press ENTER.

Moving Columns and Rows

When you move entire rows or columns, the Move command inserts them between existing rows or columns. An entire row or column must be selected before you can move it.

To move columns or rows

1. Select the columns or rows you want to move.
2. From the Edit menu, choose Move.
3. Select the row or column to which you want to move.
4. Press ENTER.

For information on	See
Selecting columns and rows	Selecting

Naming Reports

When you create a new report, Works automatically assigns it a name. The first report you create has the name Report1, the second report has the name Report2, and so on. You can give each report a descriptive name so that it is easier to identify on the Report menu or in the Reports dialog box. The report name does not actually appear in the report. You can name a report from either the Database or Report screen.

To name or rename a report

1. From the Report menu, choose Reports.
2. From the Reports list box, select the report you want to name.
3. In the Name text box, type the new name.
4. Choose Rename.

   You can also press ENTER.

You can name or rename reports using the Reports command on the Form, List, or Report screen. Each database can have up to eight reports. The reports are saved as part of the database.

You can switch between reports using the numbered commands on the Report menu. Works displays each report name preceded by a number.

To switch between reports

- From the Report menu, choose the number of the report you want to use. A mark indicates the active report.

New Command (Report Menu)

The Report menu's New command creates a new report. The new report becomes the active report. Works excludes all records hidden by a query or the Hide Records command from the report.

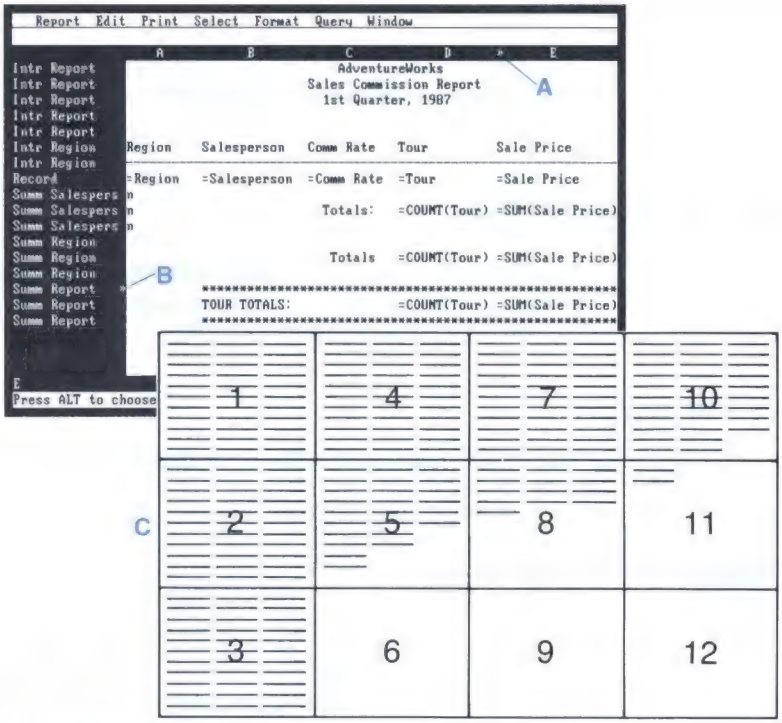
To create a new report

- From the Report menu, choose New.

Page Breaks and Pagination

A page break tells the printer where to begin a new page. You can insert page breaks yourself or let Works determine them automatically for you. Works determines where automatic page breaks occur according to the margins and page size you set using the Print menu's Layout command. Works prints records until the page is full or until it encounters a page break you created.

Use the Print menu's Insert Page Break command to create your own page breaks. The Insert Page Break command creates a horizontal page break above a selected row, or a vertical page break to the left of a selected column. The selected row or column becomes the first row or column on a page.



A Vertical page breaks point to the first column that will print on subsequent pages.

B Horizontal page breaks point to the first row that will print at the top of a page.

C Works breaks large reports into pages and prints them in the order shown.

Large reports usually require several pages. You can lay out the pages as shown in the diagram to see the entire report. Works prints the pages in the order shown.

To insert a page break

1. Select the record or field where you want the page break.
2. From the Print menu, choose Insert Page Break.

To delete a page break

1. Select the record or field containing the page break.
2. From the Print menu, choose Delete Page Break.

Percent Command (Format Menu)

The Format menu's Percent command formats selected cells to show percentages (e.g., if you choose two decimal places, then .43 becomes 43.00%).

For information on	See
Using Percent and other formatting commands	Formatting Numbers

Print Command (Print Menu)
Print Report Command (Print Menu)
(List, Form)

The Print menu's Print command and Print Report command print the report on paper or to a disk file. In addition to the standard dialog box options, you can specify whether or not you want to print all but the record rows instead of all rows in a report.

You can also print reports from the List or Form screen using the Print menu's Print Report command. Both commands are the same.

Print all but Record rows Prints only the Intr and Summ rows from the report.

To print the active report

1. From the Print menu, choose Print.
2. Turn on the Print All But Record Rows check box if you want only the Summ and Summ Report rows from the report to print. Turn off the check box if you want the entire report to print.
3. Press ENTER.

For information on	See
Laying out pages	Chapter 2, "Using Basic Skills"
Setting page breaks	Page Breaks and Pagination

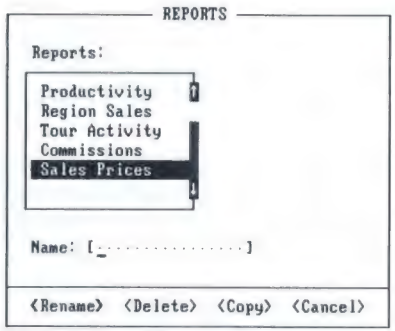
Querying

Querying lets you display records from your database that match certain criteria. Works includes information from the displayed database records in the report. All records that do not match the criteria are hidden.

The List, Form, and Report screens share the same Query command. For information on how to query the database, see "Querying" in Chapter 11, "Database Reference."

Reports Command (Report Menu)

The Report menu's Reports command copies reports, names or renames reports, or deletes reports from the database. The Reports command operates in exactly the same way on the List, Form, and Report screens.



Reports Lists the reports in the database.

Name If you are renaming or copying a report, type the new report name.

Rename Renames the selected report in the Name text box.

Delete Deletes the report selected in the Reports list box from the database.

Copy Copies the selected report. The copy becomes the active report and is given the name you type in the Name text box.

For information on	See
Copying reports	Copying Reports
Deleting reports	Deleting
Renaming reports	Naming Reports

Row Command (Select Menu)

Shortcut key: CONTROL+F8

The Select menu's Row command extends the current selection to include entire rows. It is most often used before inserting or deleting rows, or before inserting horizontal page breaks.

For information on	See
Inserting page breaks	Page Breaks and Pagination
Inserting rows or columns	Insert Command
Selecting columns or rows	Selecting

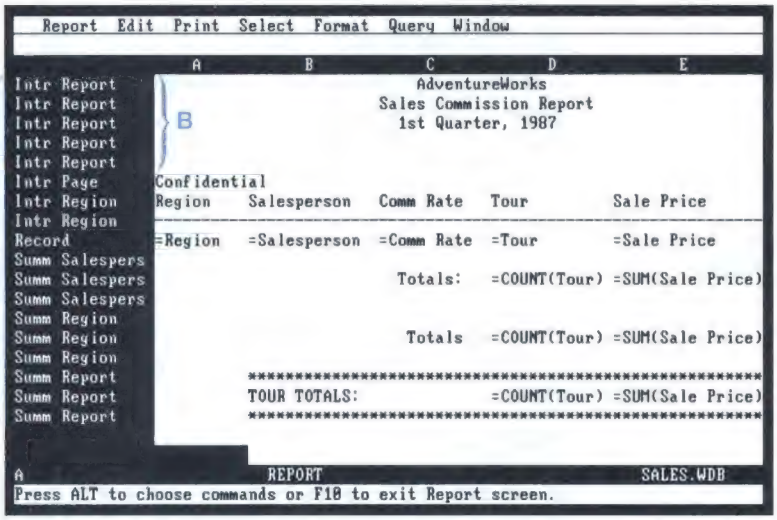
Row Types

A report definition is made up of rows containing text, numbers, and statistics. Each row has a row type. Row types control where the row prints in a report:

Row type	Prints
Intr Report	At the beginning of a report
Intr Page	At the top of each page
Intr *1st breakfield*	At the beginning of each group created by the 1st breakfield
Intr *2nd breakfield*	At the beginning of each group created by the 2nd breakfield
Intr *3rd breakfield*	At the beginning of each group created by the 3rd breakfield

Row type	Prints
Record	Each record displayed in the database.
Summ *3rd breakfield*	At the end of each group created by the 3rd breakfield
Summ *2nd breakfield*	At the end of each group created by the 2nd breakfield
Summ *1st breakfield*	At the end of each group created by the 1st breakfield
Summ Report	At the end of a report

You can have any number of any row type in a report definition. Works automatically arranges row types in the order shown above.



A Works automatically puts row types in the correct order.
B You can have as many rows of a row type as you need.

To insert rows

1. On the Report screen, select the rows where you want the new rows to be located.
2. From the Edit menu, choose Insert.

3 In the Type list box, select the row type.

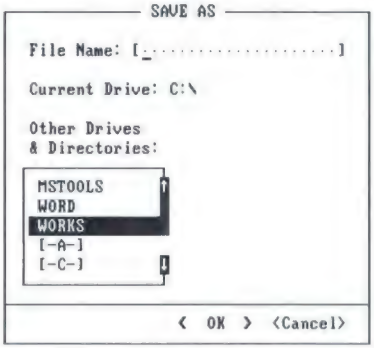
4 Press ENTER.

Works inserts the new rows above the selected row.

For information on	See
Deleting rows and columns	Erasing
Inserting rows and columns	Insert Command

Save As Command (Report Menu)

The Report menu's Save As command saves all but the Record rows of the active report to a disk file as a special file you can use in the Spreadsheet, Database, or Word Processor.



File Name Displays the name of the file the active report will be saved in.

Other Drives & Directories Displays the selected drive and directory into which the file will be saved. You can use the file in the other Works tools:

In the	You can
Spreadsheet	Analyze the summary totals, or create a chart
Word Processor	Include the summary totals in a file
Database	Create an ongoing database of summary totals

To save the active report in a file

1. From the Report menu, choose Save As.
2. In the Other Drives & Directories list box, select the drive and directory in which you want to save the report file.
3. In the File Name text box, type a name for the file in which you want to save the report.
4. Press ENTER.

For information on how to insert a database report summary into a Works file using the Save As command, see "Inserting a Database Report Summary into a Works File" in Chapter 16, "Exchanging Information Between Tools."

Select Text Printer Command (Print Menu)

The Print menu's Select Text Printer command tells Works what printer is attached to your computer. The highlight will be on the name of that printer in the dialog box that appears after entering the command.

For information on setting up and selecting printers, see Chapter 2, "Using Basic Skills."

Selecting

Selecting designates which cells you want to work with. You can work with several cells at once rather than one cell at a time. For example, you can clear all of the cells in a column in one step if you select the column first. This is much faster than clearing each cell individually.

A single cell, called the active cell, is selected at all times. The active cell is indicated by the highlight. The formula bar always shows the contents of the active cell.

You can enlarge the selection from one cell to a range. How you enlarge the selection depends on what range you want to select. The procedures below tell you how to select a cell or a range.

To select a cell

- Use the DIRECTION keys to select the cell you want.

To select a range

1. Select the cell in the upper-left cell of the range you want to select.
2. Press F8 and use the DIRECTION keys to extend the selection to the other cells in the range.

   When you press F8, EXTEND appears in the status line. Press F8 to turn off EXTEND. You can also hold down the SHIFT key and press the DIRECTION keys to extend the selection to a range.

To select columns or rows

1. Select a cell in each column or row you want to select.
2. From the Select menu, choose Column to select the column, or choose Row to select the row.

   You can also press SHIFT + F8 to select the columns, or CONTROL + F8 to select the rows.

To select the entire report

1. From the Select menu, choose Column.
2. From the Select menu, choose Row.

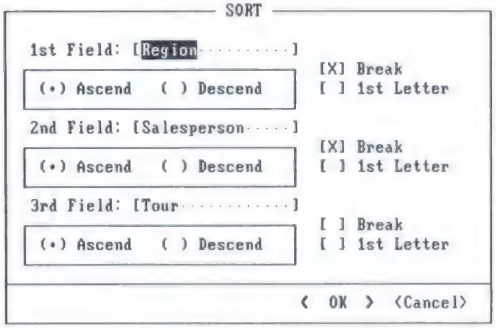
You can also press CONTROL + SHIFT + F8 to select the entire report.

To collapse a selection

- If you selected cells by pressing F8 and then the DIRECTION keys, press ESCAPE twice.
- If you selected cells by pressing SHIFT + DIRECTION keys, press ESCAPE once.

Sort Command (Query Menu)

The Query menu's Sort command sorts all records that will be in the report in either ascending or descending order, based on zero, one, two, or three sortfields. All sortfields are also breakfields, unless you specify otherwise. Works inserts a Summ row into a report for each sortfield that is also designated as a breakfield. If you turn off the breakfield option for a sortfield, Works removes the related Intr and Summ rows from the report definition. Works uses different sortfields for sorting the database and a report. You can also use Sort to tell Works which sortfields you want to be breakfields.



Break If the check box is turned on, it makes a break, or creates space, in the report whenever the contents of the breakfield change. If the check box is off, it doesn't make a break.

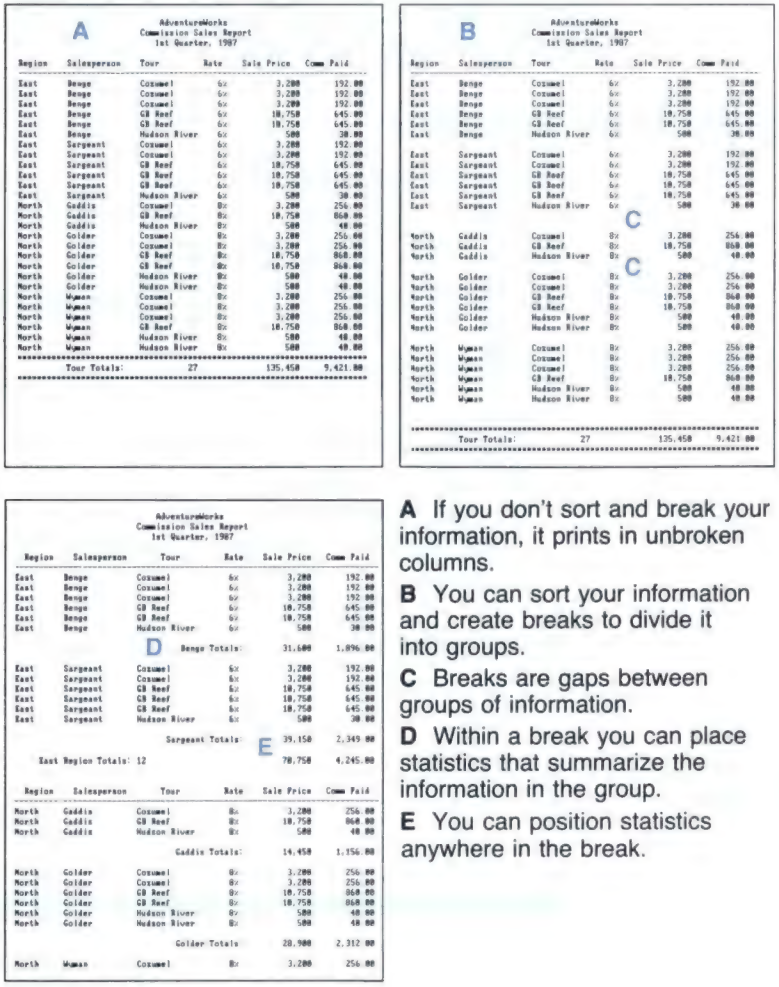
1st Letter If the check box is turned on, it makes a break in the report whenever the first letter of the breakfield's contents changes.

For more information on sorting, see "Sort command" in Chapter 11, "Database Reference."

You can enter any field name as a sortfield and also designate it as a breakfield. When you first create a report definition, Works proposes the sortfields in the Database's Sort command as the Report sortfields. If you did not sort the database, then Works proposes the first field in the database as the first sortfield in the report. Works can store different sortfields for the database and each of the reports.

When a field containing text is entered as a sortfield, you can designate whether you want breaks to occur whenever the letter changes. If you want to do this with a field of numbers, you must enter the numbers as text.

Works sorts and breaks the database just before you print or view the report. Each report can have its own sort order. The sort order is saved with the report.



A If you don't sort and break your information, it prints in unbroken columns.

B You can sort your information and create breaks to divide it into groups.

C Breaks are gaps between groups of information.

D Within a break you can place statistics that summarize the information in the group.

E You can position statistics anywhere in the break.

Using Breaks

Database records can be broken into smaller groups of records. Works separates these groups with a break. A break is made of one or more lines inserted between groups of records. The lines can be blank, or can contain text and statistics that summarize the information in the preceding group.

Groups organize information and make it easier to understand. For example, phone books group all last names beginning with the same letter of the alphabet. Works can make the same type of breaks in your report. You create a break by telling Works which sortfields are also breakfields. You also have the option of creating a break whenever the content of the key field changes, or just when the first letter of the key field changes.

To sort a database and set up breaks

1. From the Query menu, choose Sort.
2. In the 1st Field text box, type the name of the first field to be sorted.
3. Select either Ascend or Descend sort order.
4. Turn on the Break check box if you want the sortfield also to be a breakfield. Turn the check box off if you don't want the sortfield to be a breakfield.
5. Turn on the 1st Letter check box if you want a break whenever the first letter of the breakfield changes. Turn off the check box if you want breaks whenever the contents of the breakfield change.

   The 1st Letter check box works only when you turn on the Break check box, and the field contains text.
6. Repeat steps 2-5 for the second and third fields to be sorted.
7. Press ENTER.

For information on	See
Using sorting and breaks	Chapter 12, "Introduction to Reporting"

Status Line

A Column indicator
B Report screen indicator
C EDIT/COPY/MOVE/POINT indicator
D Extend indicator
E NUMLOCK and CAPLOCK indicators
F Filename

The status line is the upper of the two lines across the bottom of the screen. It displays information about what you are seeing and doing as you use reporting.

C Displays the column letter where the active cell is located.

EDIT Displays EDIT when you are editing a cell, COPY when you are using the Copy command, or MOVE when you are using the Move command.

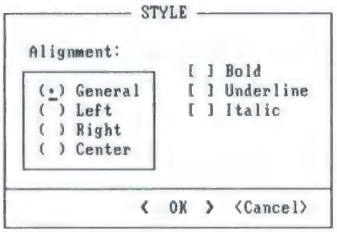
EXTEND Appears when you have pressed F8 to extend a selection.

FILENAME.EXT Displays the name of the displayed file.

For information on	See
Common status line indicators	Chapter 2, "Using Basic Skills"
Selecting	Selecting

Style Command (Format Menu)

The Format menu's Style command sets alignments and styles (bold, underline, and italic).



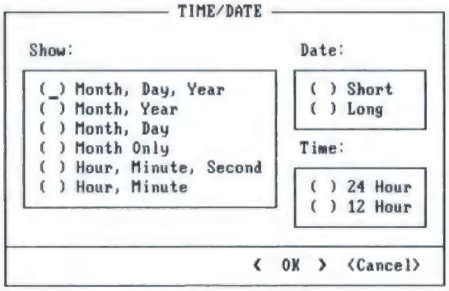
Alignment Changes the position of a displayed value or text in a cell. Works automatically selects General alignment where text is left-aligned; numbers, ERRs and NAs are right-aligned.

Bold, Underline, Italic Formats the selected cells using the designated style. Formatted cells appear on the screen in bold.

For information on	See
Aligning values in a cell	Aligning Values
Locking and protecting cells	Protecting Cells, in Chapter 11, "Database Reference"

Time/Date Command (Format Menu)

The Format menu's Time/Date command displays numeric values as a date or time.



Show Select an option that describes what parts of the date or time you want to display.

Date If you are formatting a date, select the long form to display months in a form similar to Jan or Feb, and years in four digits (1988). Select the short form to display the date in a form similar to 10/30/88.

Time If you are formatting a time, select the 24-hour form to display it in a form similar to 13:15:45. Select the 12-hour form to display the time in a form similar to 1:15 P.M.

For information on how to enter dates and times into the database, see "Entering and Editing" in this chapter, and in Chapter 11, "Database Reference," see "Dates and Times."

View Command (Report Menu)

Shortcut key: SHIFT+F10

The Report menu's View command displays the active report. The View command operates exactly the same way on the List, Form, and Report screens.

To view a report

- From the Report menu, choose View.

To display the next screen

- Press ENTER.

To display the Report screen

- Press ESCAPE.

Width Command (Format Menu)

The Format menu's Width command changes the width of all selected columns.

You need not select the entire column before you change its width. If any cell in a column is selected, the new column width applies to all cells in that column.

To adjust all 256 columns, select an entire row before setting the column width. The Width command affects all columns in the selection. Column widths can vary from zero (a hidden column) to 79 characters.

If a column is too narrow to display a formatted value, Works displays ######. Widen the column to remove the ###### and display the actual value.

To change a width

1. Select a cell in each column you want to change.
2. From the Format menu, choose Width.
3. In the dialog box, type the column width.
4. Press ENTER.

Communications

Welcome to Works Communications, your information access and exchange tool. With Communications, you can connect your personal computer to other computers to:

- Access data from dial-in information services.
- Exchange files with other PC users.
- Use your PC as a terminal to access a mainframe or minicomputer.

The next two chapters explain how to use Communications.

- Chapter 14, "Introduction to Communications," explains the basic steps of a communications session, and gives an introduction to sending and receiving information with Works.
- Chapter 15, "Communications Reference," is an alphabetical reference to Communications commands, procedures, and related topics.

14 Introduction to Communications

This chapter introduces some of the basic concepts and terminology that will help you understand and use Communications. You'll learn about:

- Getting ready.
- Opening a file and adjusting settings.
- Making a connection.
- Sending and receiving information.
- Calling other computers.

When you want to start using Communications, refer to the detailed information about commands, procedures, and terminology in Chapter 15, "Communications Reference."

Getting Ready for Communications

To use Communications, you must first install a modem on your PC, or connect your PC directly to another computer with a cable.

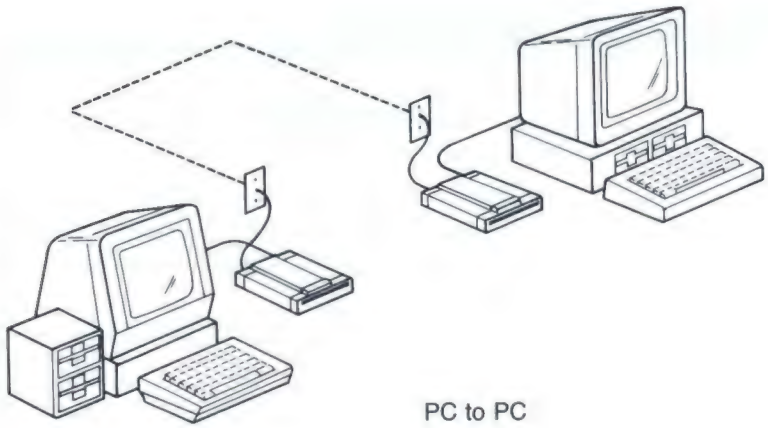
Installing a Modem

A modem allows your computer to "talk" to another computer over telephone lines. The computer you call must also have a modem and be running communications software.

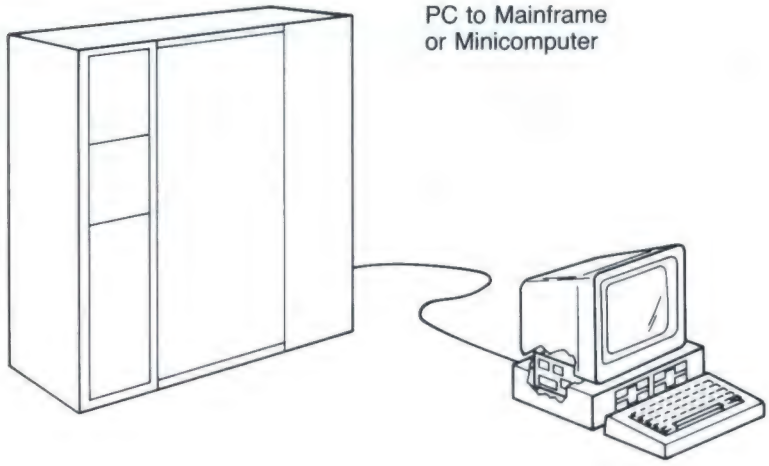
Whether your modem is internal (a board you install in a slot inside your PC) or external (a separate unit you attach with a cable to a free serial port), it responds to commands from Works, and sends and receives data over telephone lines.

For example, when you enter a phone number with the Phone command and choose the Connect command, Works tells the modem to dial the number you entered and through the modem establishes a link to the computer on the other end.

Works uses the Hayes command set (sometimes called the "AT" commands) to control your modem. This means that Works works best with Hayes-compatible modems, which can respond to these commands. If you have an acoustic coupler or a non-Hayes-compatible modem, refer to Appendix C, "Modems, Cables, and Terminal Emulation," for information about how to use it with Works.



PC to PC



PC to Mainframe
or Minicomputer

Installing a Direct-Connect Cable

You can also connect your PC directly to another computer by using a cable. The type of cables and adapters depends on whether you are cabling to a mainframe, a minicomputer, a network, or another PC. Your dealer or computer system manager can give you specific information about the type of cable required for your connection.

Starting a Communications Session

Once you have your modem or cable installed, you are ready to use Communications. No matter what kind of computer you are calling, or what type of modem or cable you are using, the basic steps are the same:

- Open or create a Communications file.

  Use the commands on the File menu. Adjust communications settings (if necessary) with the commands on the Options menu.
- Connect.

  Use the Connect command on the Connect menu.
- Communicate.

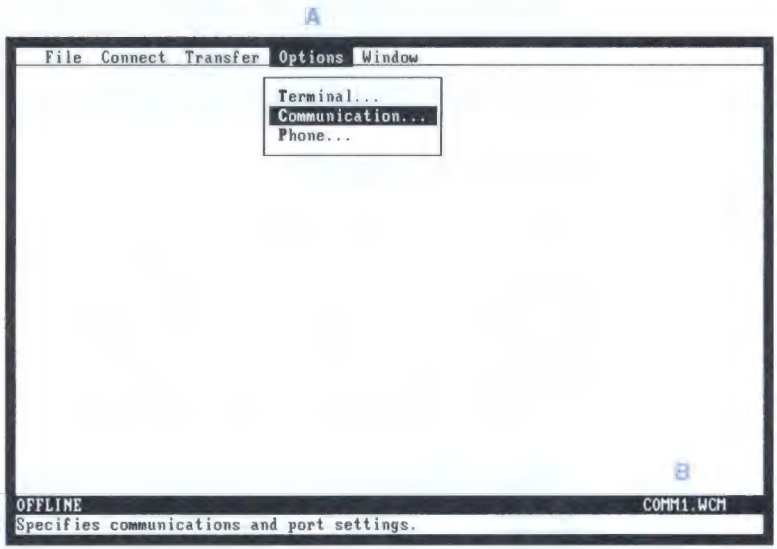
  Use the commands on the Transfer menu to send and receive information.
- End your communications session.

  Use the Connect command again to disconnect. Save your settings for future use.

Opening or Creating a Communications File

To start a communications session, choose New from the File menu to create a new Communications file, or Open to open an existing one.

When you create or open a Communications file, you see the following screen.



A Use the commands on the Options menu to adjust settings.
B Filename
C Status line
D Message line

The Communications screens, like other Works screens, have menus at the top, and message and status lines at the bottom. The message and status lines do not contain words or numbers; they are left empty to receive information sent by the computer you are connected to.

You store communications settings and phone numbers for calling other computers in Communications files. You may need to adjust various Communications settings in your Communications file to make them compatible with the computer you are calling. Use the three commands on the Options menu to adjust the settings:

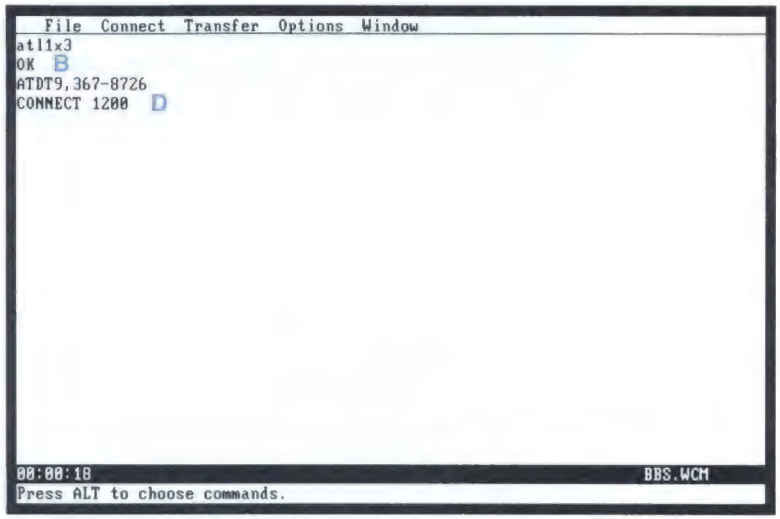
Command	Type of settings
Communication	Settings that control the flow of information between your PC and another computer.
Phone	Settings that control how your modem makes calls. Enter the phone number you are calling here.
Terminal	Settings that control how your PC displays and responds to text sent to it.

You can save the settings for each computer you call in a separate Communications file, so you don't have to adjust settings each time.

For more information about Communications files and adjusting settings, see "Setting Up for Communications" in Chapter 15.

Making a Connection

Once you have your Communications file open and set up with the proper settings, choose Connect. Works dials the phone number you have entered, and establishes a connection when the modem on the other end answers the phone. You will see the commands Works sends to the modem, and the modem response, in the upper-left corner of your screen. When you are connected, a mark appears next to Connect on the Connect menu, and an elapsed connect time indicator replaces the OFFLINE message on the left end of the status line.



A Modem setup (optional)
B Modem response
C Works sends dial command to modem
D Status message from modem
E Elapsed connect time indicator

If you are cabled directly to the other computer, don't enter a phone number when making a direct connection. Works establishes a connection when you choose Connect.

Any computer you connect to during a communications session is called the "host" computer.

Sending and Receiving Information

Once you have established a connection with another computer, you can communicate by sending and receiving information in several different ways.

Typing and Displaying Text

When your PC is connected to another computer, whatever you type at the keyboard is sent out, character by character, to the other computer via the modem or cable. Text the other computer sends to you (such as information from a service) appears on your PC screen.

Downloading and Uploading Files

With Works you can enhance the basic type-and-display method of communication by using your computer's ability to store information in files. You can save files and information sent to you. You can also send files to other computers, using the commands on the Transfer menu.

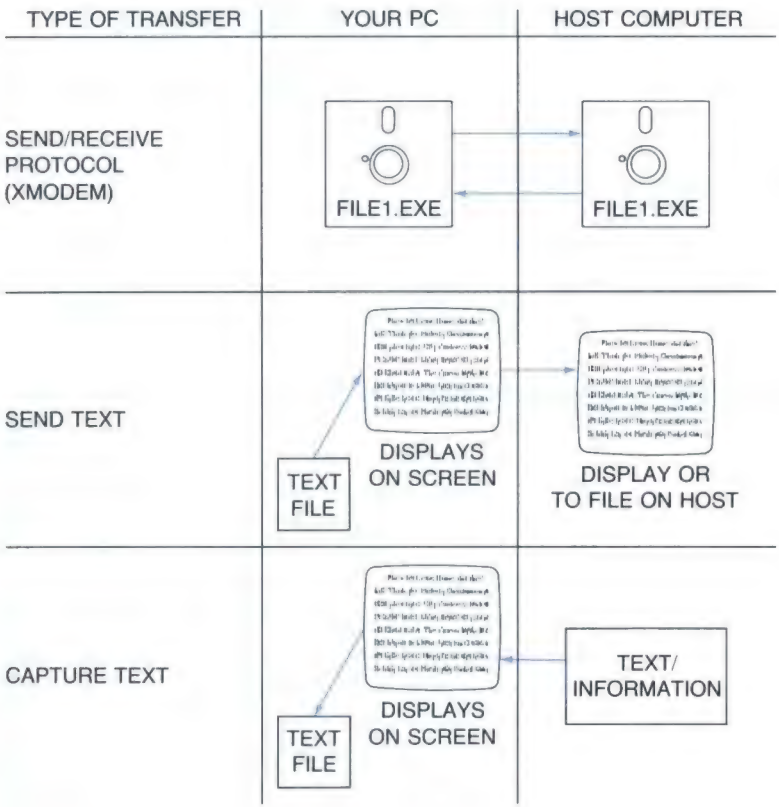
Downloading is placing the information sent to you by another computer into a file on your computer. There are two ways to do this with Works:

- With the Capture Text command, you save the information that appears on your screen in a file, so that you can print it out, review and edit it, and incorporate it into other Works files.
- With the Receive Protocol command, you can transfer a file from another computer to a file on your disk. Choose Receive Protocol if you want to download a program or game from an information service or bulletin board, or if someone is sending you a Works file. Works uses the XMODEM error-checking and correction protocol to make sure that you receive the file error-free.

Uploading is sending information stored on your computer's disk to another computer. There are two ways to do this with Works:

- With the Send Text command. This is like the type-and-display method of sending and receiving information, only faster. You can compose a message or letter with the Word Processor, save it in a file, then send it rapidly, line by line, to another computer.
- With the Send Protocol command. This command transfers a file from storage on your disk to storage on another computer's disk; choose Send Protocol when you want to transfer a file to another PC, or upload a file

to an information service or bulletin board. As with Receive Protocol, Works uses XMODEM to make sure the file is sent without errors.



Ending Your Communications Session

When you have finished with your communications session, choose Connect again to disconnect from the other computer. You must disconnect before starting another communications session.

When you choose the Close command to close the Communications file or choose Exit to leave Works, Works will ask you if you want to save any changes you made to the settings during your session.

If you want to make the current file a new file with a different name, use the Save As command before closing the file.

Putting Communications to Work

Now that you know about the basics of getting connected and how to send and receive information, you can put Communications to work for you as an information access and exchange tool.

This section introduces ways to use Communications, such as:

- Using information services.
- Using your PC as a terminal.
- Exchanging information with other PC users.

Using Information Services

Information services are centralized computer systems that, for a subscription fee, give you access to information about almost any topic.

With information services, you can get the latest news, do research, send electronic mail, plan a trip, or even go shopping or play games, without leaving your home or office.

To get started using a service, call the service's information number to find out how to sign up and get a password and local phone number for accessing the service. Call the 800 information operator in your area to get the service's information number.

When you subscribe to the service, they will send you a packet of information, including the communications settings to use to call them. All you have to do is create a new Communications file, enter the settings they specify, and type in the phone number. Then you are ready to connect. Create a different Communications file for each service you contact.

Automatic Sign-On

Access charges for most information services begin as soon as you connect. Works saves you time and money with a feature that lets you record your account identification number and password, and play them back automatically in response to prompts from the service.

You can use automatic sign-on to record and play back almost any prompt-and-response sequence you use repeatedly during a communications session. For details and limitations, see "Signing On," in Chapter 15.

Using Your PC as a Terminal

One great advantage of having communications software is the flexibility it can give you when using your PC to work with other computers. With Works Communications and a modem or the proper cable connection, you may be able to:

- "Dial up" the office computer system to work at home, or send reports while travelling.
- Use Communications as a way to move information between your PC and an office minicomputer, minicomputer network, or mainframe.
- Use your PC as a terminal so you can access another computer.

Using your PC as a terminal is called "terminal emulation," which means that your PC responds to the host like a VT52 or ANSI terminal.

Exchanging Information with Other PC Users

With Works, you can exchange information with other PC users as easily as making a phone call. For example, you can transfer files between PCs at work or at home, contact computer bulletin boards and user groups, and send electronic mail messages.

PC-to-PC communication, like any phone call, requires that someone be present at each end. You can call a PC user across town, or in the same office, and send them a Works document or a program.

A bulletin board is a PC with software that answers the telephone and allows you to leave messages for other users. Some bulletin boards have free or low-cost "shareware" computer software files that you can download. You can usually get the phone numbers for local bulletin boards from a computer dealer.

With electronic mail services, you can send messages or files to other users. The advantage over a direct PC-to-PC call is that the other party does not have to be present. You can store information in a person's "mailbox," which they can later check for messages. Electronic mail services are often provided at an additional charge by information services.

This is the reference chapter for Communications. It contains information about the commands, about performing communications tasks, and other features.

Topics in this chapter are listed in alphabetical order.

A task topic describes the concepts and procedures for a task. Some task topics describe using one feature or command. Other task topics describe several related features or commands.

A command topic describes the purpose of a command and each of its options.

At the end of most topics is a list of related topics.

If you are unfamiliar with Communications or Microsoft Works, you should complete the Learning Microsoft Works tutorial. By working through the practices there, you will learn the basics and be introduced to some Communications advanced features.

Add to Incoming Lines (Options Menu, Terminal Dialog Box)

The Add to Incoming Lines setting adds a carriage return or line feed to the end of each line of text as it is displayed on your screen.

Most computers end each line with both a carriage return (CR) and a line feed (LF) character. If a computer sends you lines of text that don't include both these characters, the lines will either overwrite each other (no LF) or jump down a line before reaching the end of the screen (no CR). Use this setting to add missing characters so the text displays properly.

For information on	See
Communications settings	Setting Up for Communications
Terminal settings	Terminal Command

Answering Incoming Calls

Other computer users with modems and communications software can call your computer. But before answering incoming calls, make sure that your Communications settings match those of the computer calling you.

If you get calls frequently from the same computer, you can create a separate Communications file to store the proper settings; whenever you are expecting a call from this computer, just open that file and choose the Connect command.

If you have a Hayes-compatible auto-answer modem, Works can answer calls automatically when they come in. For answering calls with other types of modems, see Appendix C, "Modems, Cables, and Terminal Emulation."

To answer an incoming call

1. Adjust settings for compatibility with the computer calling you. For more information, see the "Setting Up for Communications" topic in this chapter.
2. From the Options menu, choose Phone.
3. In the Phone dialog box, turn on Automatic Answer.
4. From the Connect menu, choose Connect. This puts the modem into auto-answer mode.

When the call comes in, your modem will automatically answer the phone.

Once connected, you can type messages, or use the commands on the Transfer menu to send and receive files.

Choose Save As on the File menu if you want to save the file for future use.

For information on	See
Answering calls	Automatic Answer Connecting Setting Up for Communications

ASCII Files

An ASCII file is a "plain text" file that does not contain any special formatting characters. When you save a Works file with the Text option (Save As command), the result is an ASCII file.

For information on	See
Binary files	Binary Files
File types	Receive Protocol Command Send Protocol Command

Automatic Answer (Options Menu, Phone Dialog Box)

Automatic Answer sets your modem to automatically answer incoming calls.

To set your modem to Automatic Answer

1. From the Options menu, choose Phone.
2. In the Phone dialog box, turn on Automatic Answer.

3. Press ENTER.
4. From the Connect menu, choose Connect.

   Works cancels auto-answer when you disconnect.

For information on	See
Using auto-answer mode	Answering Incoming Calls

Baud Rate (Options Menu, Communication Dialog Box)

The Baud Rate setting determines the speed at which data is transmitted back and forth between two computers. Baud rate is approximately equal to bits transferred per second.

Works can transmit and receive information at any rate between 50 and 9600 baud. Set baud rate to match the baud rate of the modem or computer you are communicating with. For example, you often have a choice of 300, 1200, or 2400 baud when communicating with an information service.

For efficiency, use the highest baud rate that your modem can accommodate, but make sure that the computer on the other end is using the same rate.

Most communication by modem takes place at 300, 1200, or 2400 baud. If you are communicating by direct cable connection, you are not limited by the modem and can send and receive at higher speeds.

For information on	See
Communications settings	Communication Command Setting Up for Communications

Binary Files

A binary file is any file that contains special formatting codes or non-displayable characters. Any file that is not a plain text (ASCII) file is a binary file to Works.

For example, formatted Works Word Processor, Spreadsheet, or Database files are binary files, as are software programs (with .COM or .EXE extensions).

When sending or receiving binary files with Works (Send Protocol or Receive Protocol command), select the Binary option under Format.

For information on	See
ASCII files	ASCII Files
File types	Receive Protocol Command Send Protocol Command

Break Command (Connect Menu)

The Break command sends a break signal to the host computer. When connected to a host computer, you may want to send a break signal to get the host's attention, to force it to interrupt a program it is running, or to log off. The break signal Works sends is four seconds long.

To send a break signal

- From the Connect menu, choose Break.

Cable Connections

You can hook your computer directly to another computer if you have the right cables and adapters.

Once you have the cable set up, establish a communications link with the other computer like you do when using a modem, by adjusting settings to match the host and connecting. You don't need the Options Phone settings, so be sure to leave Phone Number and Modem Setup blank.

To connect via cable

- From the Connect menu, choose Connect.

For information on	See
Cable installation	Appendix C, "Modems, Cables, and Terminal Emulation"
Connecting	Connect Command Connecting

Calling a Mainframe or Minicomputer

You can call a mainframe or a minicomputer if it is equipped with a modem, or connect your PC directly to it with a cable. You need to know what communications settings the computer requires, and the phone number to call if you are connecting with a modem. Leave the Phone Number text box blank if you are connecting with a cable.

The Terminal Type settings in the Options Terminal dialog box are particularly important when calling a mainframe or minicomputer, because they allow your PC to mimic or "emulate" different terminal types. Find out if the computer works best with VT52 type terminals or ANSI (VT100 or VT220/VT240) type terminals. Then choose the appropriate Terminal Type setting in the Options Terminal dialog box.

To call a mainframe or minicomputer

1. Set up for communications by opening or creating a Communications file and adjusting settings if necessary. For more information, see the "Setting Up for Communications" topic in this chapter.
2. From the Connect menu, choose Connect.
3. When the host responds and a connection is established, enter your identification name or number and password (if required).

For information on	See
Communications settings	Setting Up for Communications
Establishing a connection	Connect Command Connecting
Terminal emulation	Terminal Command Terminal Type
Communications files	Communications Files

Calling a Personal Computer

When calling PC-to-PC, you need to match settings carefully. It's a good idea to call the other party before the communications session to agree on settings, decide who calls and who answers, and set up a time for the call.

If the other party has Works, tell them to put Communications into auto-answer (see the "Answering Incoming Calls" topic in this chapter). If they are not using Works, tell them to put their system into Receive or Answer mode.

If the other computer does not echo received characters back to you, you may need to turn on the Local Echo setting in order to see the characters you type. Turn Local Echo on (Options menu, Terminal dialog box) when communicating Works-to-Works.

To call a personal computer

1. Set up for communications by opening or creating a Communications file and adjusting settings. Follow the procedures in the "Setting Up for Communications" topic in this chapter.
2. From the Connect menu, choose Connect.

When the connection is established, you and the other party can type messages back and forth to check the connection. You may have to adjust the Options Terminal Local Echo setting if you see doubled characters or missing letters. You may also want to change the Options Terminal Add to Incoming Lines Setting if lines overwrite each other.

For information on	See
Communications settings	Setting Up for Communications Individual topics for each setting
Establishing a connection	Connect Command Connecting
Local Echo setting	Local Echo
Communications files	Communications Files
Overwriting lines	Add to Incoming Lines

Calling an Information Service

When you subscribe to an information service, you should receive a packet that contains your user identification name or number and a password allowing you to log on to the service. It should also describe the communications settings to use with the service.

If the local phone number for the service is not provided in your subscription packet, call the service and ask for the number (you can usually get the service's information number from the 800 information operator).

To call an information service

1. Set up for communications. Open an existing Communications file or create a new one, and adjust settings for compatibility with the service if necessary. For more information, see the "Setting Up for Communications" topic in this chapter.
2. From the Options menu, choose Phone.
3. In the text box, type in the local phone number for the service.
4. From the Connect menu, choose Connect.
5. After a connection is established, enter your identification name or number and password in response to prompts from the service's computer.

For information on	See
Communications settings	Setting Up for Communications
Establishing a connection	Connect Command Connecting
Communications files	Communications Files

Capture Text Command (Transfer Menu)

The Capture Text command saves text or information as it displays on your screen in a text file on your disk.

When you are connected to another computer, the text or information it sends you appears on your PC screen and then scrolls off as the screen is filled. Unless you "capture" this text by putting it into a file, it is lost as soon as it is displayed; the information on the screen is not saved.

Use Capture Text when you want to save the text or information you are receiving and put it into a file. Once you have saved the information as a file, you can open it as a word processing document and edit the text, print it, or incorporate it into another Works file.

To start capturing text

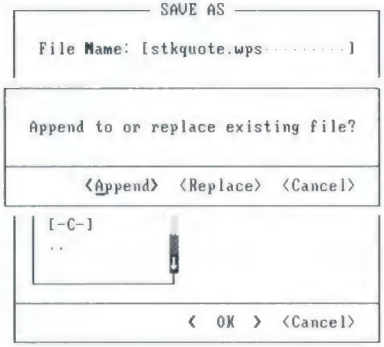
1. From the Transfer menu, choose Capture Text.

   The status line displays CAPTURE.
2. When the Save As file list box displays, enter a new filename, or the name of an existing file.
3. Press ENTER.

Works will put everything that displays on your screen into the file.

Tip Give the file a Works extension (.WPS, .WKS, .WDB), so you can see the file listed in the dialog box when you choose the Open command.

Appending or Overwriting Text During Capture



If the name you specify in the Save As dialog box is the name of an existing file, Works gives you the option to:

- **Append** — Add the new information to the end of the existing file.
- **Replace** — Delete the existing contents of the file and replace it with the new information.

To stop capturing text

1. From the Transfer menu, choose End Capture Text.

If You Run Out of Disk Space During Text Capture

You must have sufficient disk space available to accommodate the incoming text. If the file you are capturing becomes larger than the space available on your current disk, Works will tell you and cancel the capture.

To restart a capture

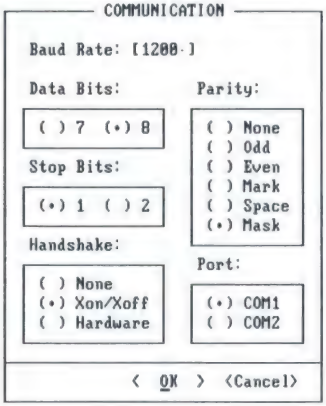
1. From the Connect menu, choose Pause to tell the host computer to stop sending (the Options Communication Handshake option must be active, and the host must be able to respond to handshaking signals).

2. Change drives or insert another diskette and choose Capture Text again.
3. In the Save As dialog box, type in the name of the file you were capturing text to; choose the Append option when the Append/Replace dialog box appears.
4. From the Connect menu, choose Pause again to tell the host to start sending again.

For information on	See
Using captured text files	Chapter 16, "Exchanging Information Between Tools"

Communication Command (Options Menu)

The Communication command adjusts the settings that control the way your PC exchanges information with another computer.



Baud Rate Set to match the baud rate of your modem and the modem you are calling. Enter a number between 50 and 9600. Most common settings are 300, 1200, 2400, or 9600 baud. Use 9600 baud for most direct cable connecting.

Data Bits The length (in bits) of each character transmitted, also known as word length or data size. Select 7 or 8 to match the other computer's requirements.

Stop Bits Number of bits to indicate end of each character transmitted. Select 1 or 2 to match the other computer's requirements.

Parity Determines how an optional bit in each transmitted character will be interpreted for error checking. Select Even, Odd, Mark, Space, Mask, or None to match the requirements of the computer you are connected to.

Handshake Set to match the type of flow control (pause and continue signals) the other computer can recognize. Select Hardware for computers that recognize hardware handshaking signals. Select XOn/XOff for computers that respond to software handshaking signals. Select None when you know that the host does not use handshaking.

Note The Pause command on the Connect menu will only work if you select Hardware or XOn/XOff handshaking.

Port Select COM1 or COM2 to match the port that your modem is installed on or connected to.

For information on	See
Communications settings	Setting Up for Communications Individual topics for each setting

Communications File

A Communications file stores the information Works needs for your PC to communicate with another computer. Specifically, it stores:

- The settings you make with the Options menu commands (Phone, Communication, and Terminal).
- One recorded sign-on sequence (if you use the Record Sign-On command on the Connect Menu).

You usually create a separate Communications file to save the settings for each computer you call. If you don't type in an extension, Works assigns the extension .WCM to Communications files you create. You can create, name, rename, open and close Communications files, just like the files you use with the other Works tools. Works will ask you if you want to disconnect when you try to close a Communications file when you are still connected.

Switching to Another Window When Connected

If you switch to another Works window without disconnecting, and handshaking is active, Works will send a signal to the host, telling it to pause (stop transmitting) temporarily.

If handshaking is not active, or the host you are connected to does not recognize pause signals, you lose any data transmitted while you are working in another window.

For information on	See
Creating Communications files	Setting Up for Communications
Creating, naming, renaming, opening and closing files	Setting Up for Communications Chapter 2, "Using Basic Skills"
Pausing communications	Handshake
Sign-on sequences	Record Sign-On Sign-On Command

Connect Command (Connect Menu)

The Connect command dials the phone number you enter in the Options Phone dialog box and establishes a connection when the other computer responds.

Connect also establishes a connection when your PC is directly cabled to another computer.

If you are already connected, choosing Connect hangs up (disconnects).

For information on	See
Connecting	Connecting
Cable connections	Appendix C, "Modems, Cables, and Terminal Emulation"
Disconnecting	Disconnecting

Connecting

Connecting means to establish communications with another computer by choosing the Connect command.

Connecting with a Modem

When you choose Connect from the Connect menu, Works establishes contact with your Hayes-compatible modem. If you have entered a Modem Setup command in the Options Phone dialog box, Works issues this command to the modem, then tells it to dial the phone number you entered. The modem dials the

number. If the modem on the other end of the line answers, Works establishes a connection with the other computer through the modem.

If the call does not go through, Works is still "connected" to your modem; you must choose Connect again to disconnect completely.

If you get a busy signal when attempting to connect, you can redial without disconnecting by choosing the Dial Again command from the Connect menu.

To establish a connection (modem)

1. From the Options menu, choose Phone.
2. In the Phone dialog box, type in the phone number you want to call.
3. From the Connect menu, choose Connect.

Works dials the phone number. A DIAL message is displayed on the status line.

When Works establishes a connection, the OFFLINE status message changes to an elapsed connect time indicator.

Once you are connected, whatever you type (except for ALT+ commands to Works) is sent to the other computer.

Connecting with a Cable

If your PC is cabled to another computer, Works will establish a connection via the cable when you choose Connect. You don't need to use the Options Phone command settings (leave Phone Number and Modem Setup blank).

To establish a connection (cable)

1. Connect your PC to the other computer with a cable.
2. From the Connect menu, choose Connect.

When Works establishes a connection, the OFFLINE status message changes to an elapsed connect time indicator.

Once you are connected, whatever you type (except for ALT+ commands to Works) is sent to the other computer.

For information on	See
Cable connections, connecting with non-Hayes-compatible modems	Appendix C, "Modems, Cables, and Terminal Emulation" Cable Connections
Redialing	Dialing/Redialing

Cursor Alternate (Options Menu, Terminal Dialog Box)

The Cursor Alternate setting puts your PC into VT100 Cursor Key Application mode. This means that when you are doing ANSI terminal emulation (have selected Terminal Type ANSI with the Options Terminal command) and the NUMLOCK key is off, your keypad cursor keys will send special command sequences to the host instead of moving the cursor.

For information on	See
Terminal emulation	Appendix C, "Modems, Cables, and Terminal Emulation"

Data Bits (Options Menu, Communication Dialog Box)

The Data Bits setting determines the number of bits Works uses to represent one transmitted character. Most common settings are seven bits with odd or even parity, or eight bits with no parity.

For information on	See
Communications settings	Communication Command Setting Up for Communications

Delay (Transfer Menu, Send Text Dialog Box)

The Delay setting is used when you want Works to pause at the end of each line it transmits when you are sending text.

The host computer may need a delay if it is unable to process each line completely before it receives the next line in the text file. The delay gives it time to "catch up" and deal with the incoming information.

If the host is having trouble processing incoming text, you will see that parts of your text file are missing as it displays on your screen (the host is able to echo back only the characters it receives and can process).

The number you enter is the delay in tenths of seconds.

For information on	See
Echoing of transmitted text	Local Echo
Sending text files	Send Text Command Sending Text

Dial Again Command (Connect Menu)

The Dial Again command redials the phone number in the Options Phone dialog box. Use this command when you get a busy signal, or when the connection with the host is broken and you want to dial the number again without having to disconnect completely from the modem.

For information on	See
Phone numbers	Phone Command Dialing/Redialing

Dial Type (Options Menu, Phone Dialog Box)

The Dial Type setting determines the type of phone line/telephone you have. Select Tone for touch-tone phones, Pulse for rotary phones.

For information on	See
Options Phone settings	Phone Command Setting Up for Communications

Dialing/Redialing

When you choose the Connect command, Works tells your Hayes-compatible modem to dial the number in the Options Phone dialog box. When the modem is dialing, DIAL displays on the status line.

To dial a number

1. From the Options menu, choose Phone.
2. In the Phone Number text box, type the number you want to dial.
3. Press ENTER.
4. From the Connect menu, choose Connect.
5. DIAL message displays on the status line while Works is dialing.

If you get a busy signal or the connection is broken, you can redial without disconnecting.

To redial without disconnecting

- From the Connect menu, choose Dial Again.

To cancel dialing in progress

1. Press any key when the DIAL status message is displayed.
2. In the Stop Dialing dialog box, select Yes.

For information on	See
Phone numbers	Phone Command Dial Again Command

Disconnecting

If you are already connected, choosing Connect will hang up or break the connection to a host. You can tell when you are connected because Works places a mark next to the Connect command and displays an elapsed connect time indicator on the status line. You only see the cursor when you are connected.

If you are connected to an information service, it is a good idea to log out from the system before disconnecting, because you may be charged for the time it takes the service to detect that you have hung up.

Works will ask if you want to disconnect if you attempt to close a Communications file while connected.

To disconnect

- When connected, choose Connect from the Connect menu.

For information on	See
Closing Communications files	Communications Files
Connecting	Connect Command

Download

To download is to store information sent to you by another computer in a file on your disk. You may want to download files from a friend's PC, an information service, or an electronic bulletin board system. Use Receive Protocol for transferring files with the XMODEM protocol. Use Capture Text if you just want to save the text displayed on your PC screen.

For information on	See
Receiving files	Receive Protocol Command Receiving Files
Uploading/Sending	Send Protocol Command Send Text Command Sending Files Sending Text Upload

Full Screen (Options Menu, Terminal Dialog Box)

The Full Screen setting switches your screen between Normal display and Full Screen display. Use Full Screen display when doing terminal emulation.

Normal display is the way your screen appears when you first start Communications or open a Communications file: menu bars at the top of the screen, status and message lines at the bottom of the screen, and 22 lines available for display of text.

In Full Screen display, the menu bars and status and message lines disappear when you connect, allowing you to take advantage of all the lines available on your screen (25) for viewing text or running programs on the host.

You can still use the menus as usual; they will become visible when you press ALT to select a command.

You can select Full Screen at any time, but it will go into effect only when you connect.

To select full screen display

1. From the Options menu, choose Terminal.
2. In the dialog box, turn on Full Screen.
3. Press ENTER.

To return to normal display

1. Press ALT+O to open the Options menu.
2. From the Options menu, choose Terminal.
3. Turn off Full Screen.
4. Press ENTER.

For information on	See
Terminal options	Terminal Command Terminal Type (Emulation)

Handshake (Options Menu, Communication Dialog Box)

Handshaking allows two computers to send hardware or software Pause and Continue signals to each other, to indicate whether or not they are ready to receive information at a given time.

By coordinating transmissions, handshaking assures that information is not lost during a communications session.

Both computers must support the same kind of handshaking, and have it active at the same time. If you know that the computer you are connecting to does not use either type of handshaking, select None as the handshaking option.

When you have handshaking selected, you can also use the Pause command to send Pause and Continue signals at any time during a communications session.

Software Handshaking—XOn/XOff

XOn/XOff is a software handshaking system, most commonly used when communicating through a modem. During an XOn/XOff transfer, Works will send an XOff (^S) signal to the other computer when it wants the other computer to pause. It sends an XOn signal (^Q) when it is ready to resume communications.

Hardware Handshaking

Hardware handshaking requires a direct cable connection between computers.

During hardware handshaking, Works controls the Pause and Continue signals by lowering or raising the voltage on different pins.

For information on	See
Communications settings	Communication Command Setting Up for Communications
Hardware handshaking	Appendix C, "Modems, Cables, and Terminal Emulation"
Manual control of handshaking signals	Pausing Communications

Hayes-Compatible Modems

Works is designed to work with Hayes-compatible modems. You can use Works with a modem that is not Hayes-compatible, but you will have to type the modem commands in Modem Setup in the Options Phone Dialog box.

For information on	See
Issuing commands to your modem	Modem Setup
Procedures for non-Hayes-compatible modems	Appendix C, "Modems, Cables, and Terminal Emulation"

Host Computer

A host computer is any computer to which you are connected during a communications session. Specifically, a host can be:

- The computer that controls an information service.
- A mainframe or minicomputer.
- A PC configured for use as an electronic bulletin board.
- The PC of a friend or associate.

For information on	See
Connecting to other computers	Connect Command Connecting

Keypad Alternate (Options Menu, Terminal Dialog Box)

The Keypad Alternate setting puts your PC into keypad alternate mode when emulating an ANSI or VT52 terminal. This means that when this option is selected and the NUMLOCK key is on, your keypad keys send special command sequences to the host instead of numbers and symbols.

For information on	See
Terminal emulation	Appendix C, "Modems, Cables, and Terminal Emulation" Terminal Type

Local Echo (Options Menu, Terminal Dialog Box)

Select Local Echo if the host to which you are connected does not automatically echo back the characters you type (you don't see the characters on your screen as you type them).

Usually you leave this check box off, because most hosts echo back the characters you type as they receive them (this is called Remote Echo). But, if the host does not echo incoming characters, you need to turn Local Echo on. If you are connecting to a PC which is using Works, you both should set Local Echo on.

Works treats echoed characters as incoming text. When Local Echo is on, the Options Terminal Add to Incoming Lines setting affects the text you type as well as the text you receive.

Remote Echo (check box off)	The characters you see on your screen as you type have actually been transmitted to the host and are being sent back (echoed) to you for display. This is a simple form of error checking, allowing you to see how the host received what you typed or sent. Also known as "full duplex" communications mode, or "echoplex" operation.
Local Echo (check box on)	Each character you type is simultaneously displayed on your screen and sent out to the other computer. Also known as "half duplex" communications mode, or "non-echoplex" operation.

The following table lists common Local Echo problems and solutions.

Problem	Cause/Remedy
Doubled characters	Host is already echoing back the characters you send as it receives them. Leave Local Echo unselected.
What you type does not display on your screen.	Host does not echo automatically. Select Local Echo.

For information on	See
Terminal settings	Terminal Command

Modem Setup (Options Menu, Phone Dialog Box)

The Modem Setup setting adjusts your Hayes-compatible modem prior to dialing. When you enter Hayes AT (Attention Command) modem setup commands here, and choose the Connect command, Works will send them to your modem before telling it to dial the phone number.

There are many useful modem setup commands you can use to control speaker volume, change how the modem displays result codes, enable busy signal detection, etc. Enter AT followed by one or more commands. For example, entering *ATL1X3* would cause a Hayes Smartmodem 1200 to lower speaker volume (L1) and display BUSY when it gets a busy signal (X3). Check your modem manual for the setup commands your modem can recognize.

If your modem is not Hayes-compatible, enter the dialing command and the phone number here, preceded by any setup commands you want to use. Works will send the commands to the modem when you choose the Connect command.

To enter a modem setup command

1. From the Options menu, choose Phone.
2. Type the command on the Modem Setup line and press ENTER.
3. From the Connect menu, choose Connect.

Works sends the command to the modem before it tells it to dial the phone number.

For information on	See
Phone settings	Phone Command Setting Up for Communications

Modems

A modem (short for modulator/demodulator) turns electrical signals from your computer into signals that can be transmitted over the phone lines when you send information. When you receive information, it translates the telephone signals back into electrical signals your computer can understand.

There are three basic types of modems: internal modems that install in a slot inside your PC, external modems that are attached via cable to a free serial port on your PC, and acoustic couplers which are external modems that send and receive signals through a standard telephone receiver.

Most modems respond to the commands of the Hayes command set, and are called Hayes-compatible modems. Works is designed to work best with Hayes-compatible modems.

For information on	See
Modem installation; non-Hayes-compatible modems	Appendix C, "Modems, Cables, and Terminal Emulation"

Parity (Options Menu, Communication Dialog Box)

The Parity setting sets the type of parity used during your communications session.

Parity is an optional error-checking encoding/decoding process you can tell Works to use when transmitting data in seven-bit words (Data Bits set to 7). Works uses the eighth bit of each byte to help detect whether any bits have been changed by noise or static on the line during transmission.

Usually you will use eight data bits with no parity, or seven data bits with odd or even parity. Some hosts may require mark or space parity.

If Works detects a parity error during transmission, it will display an asterisk (*) in place of the character it could not interpret.

For information on	See
Setting parity	Communication Command Setting Up for Communications

Pausing Communications

If you are connected to a host computer that recognizes handshaking, you can send a Pause signal to it. The host will stop sending until it receives a Continue signal.

Note You must select Handshake (XOn/XOff or Hardware) in the Options Communication dialog box to use the Pause command.

To pause communications

- When connected, choose Pause from the Connect menu.

  The PAUSE message appears on the status line, and a mark appears next to the command on the menu to show that it is active.

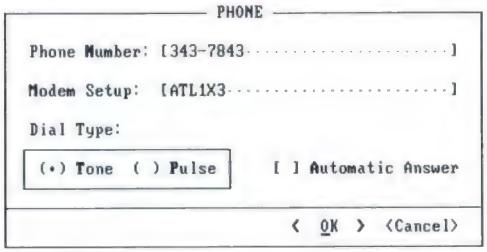
To continue communications

- From the Connect menu, choose Pause.

For information on	See
Pause and Continue signals	Handshake

Phone Command (Options Menu)

The Phone command controls which commands Works will send to your modem when you start a communications session.



Phone Number Type the phone number you want your modem to dial. Be sure to include all digits just as you would dial them yourself.

Modem Setup Type in commands to adjust your modem prior to dialing (for example, to change speaker volume). See your modem manual for the commands supported by your modem.

Dial Type Select Tone or Pulse to match the kind of dialing your phone line supports.

Automatic Answer Select this option to place your modem into automatic answer mode when you are expecting a call. When you turn on this option, it becomes active after you choose the Connect command. Works does not use the phone number when you set the modem to automatic answer mode.

For information on	See
Phone settings	Individual topics for each setting

Phone Number (Options Menu, Phone Dialog Box)

The Phone Number tells your modem what number to dial. Type in the number, including all area codes and prefixes, such as dialing 1 and area code for long-distance calls. You can include dashes or parentheses for clarity.

You can include special characters your modem recognizes. For example, a Hayes-compatible modem will recognize a comma (,) as a pause command. You might need to insert a pause to get a dial tone for an outside line, or when using a long-distance service.

For information on	See
Other phone settings	Phone Command

Port (Options Menu, Communication Dialog Box)

The Port setting determines which communications port Works will use.

Most personal computers will have two serial communications ports, designated as COM1 and COM2. Set Port to correspond to the port that your modem is installed on or connected to, or the port that is directly cabled to another computer.

For information on	See
Modem installation	Appendix C, "Modems, Cables, and Terminal Emulation"

Printing Captured Text

After you have captured the results of a communications session with the Capture Text command, you can open the resulting text file as a Word Processor file and print it.

Note You must end the text capture (use End Capture Text) before you can print the text file.

To print a captured text file

1. From the File menu, choose Open.
2. In the File Name text box, type the name of the captured text file you want to open and press ENTER.
3. In the Open As dialog box, select Word Processor and press ENTER.
4. From the Print menu, choose Print and press ENTER.

For information on	See
Capturing text files	Capture Text Command
Printing	Chapter 2, "Using Basic Skills" Chapter 4, "Word Processor Reference"

Protocol

A protocol is any set of procedures two computers follow when communicating. For Works Communications, protocol refers specifically to the error checking and correction routine, XMODEM, that Works uses when transferring files with the Send Protocol or Receive Protocol command. Works uses Checksum XMODEM, rather than the more complex CRC XMODEM.

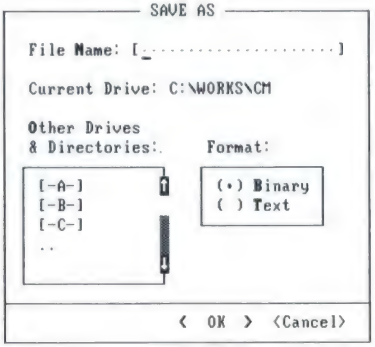
Note that the host computer you are attempting file transfers with must also use Checksum XMODEM. Most popular PC communications software packages, computerized bulletin boards, and information services support XMODEM.

You can send text or binary files with XMODEM. During an XMODEM protocol file transfer, the file is sent block by block and checked for errors on the receiving end. If the receiving computer detects an error, it requests retransmission. The process continues until the entire file has been sent without errors.

For information on	See
Sending and receiving files with protocol	Receive Protocol Command Receiving Files Send Protocol Command Sending Files

Receive Protocol Command (Transfer Menu)

The Receive Protocol command receives (downloads) files from other computers. The sending computer must send the file with Checksum XMODEM error-detection and correction protocol.



Format - Binary Select this option if you are receiving a formatted Works file, computer program, or other formatted file.

Format - Text Select this option if you are receiving a text file (contains only ASCII characters, such as a Works file saved unformatted).

For information on	See
Receiving files with protocol	Protocol Receiving Files
XMODEM	Protocol

Receiving Files

Use the Receive Protocol command when you want to transfer an entire file stored on another computer to a file on your computer's disk, such as when:

- Someone is sending you a file with XMODEM protocol with their PC and modem.
- You are downloading files from an information service, bulletin board, or other computer that supports XMODEM transfers.

Note Use the Capture Text command on the Transfer menu when you want to save information being displayed on your PC screen as a text file.

When you choose Receive Protocol, Works displays a Save As dialog box where you can enter a name for the file. Specify the type of file you are receiving:

- Select Format Binary when the file being sent to you is a formatted Works file, program, or other formatted file.
- Select Format Text when the file being sent to you is an ASCII text file or other file that has been saved unformatted (includes only alphanumeric characters — no special characters).

  When you select Format Text, Works converts all incoming end-of-line sequences to carriage return/line feed (adds CR to the end of lines that end in LF only, or adds LF to lines that end with CR only), so that the file received will always be a valid DOS text file.

Before you choose Receive Protocol, you need to tell the other computer that you are ready to receive. If you are communicating with an information service or bulletin board, you usually choose a file to download, then enter an option number or press ENTER to start the transfer. If you are communicating PC-to-PC, you can type in a message to tell the other party to start sending.

Note Make sure that you have enough room for the file on your disk before you begin receiving. If you run out of space, Works will display an alert and cancel the capture.

To receive files (XMODEM protocol)

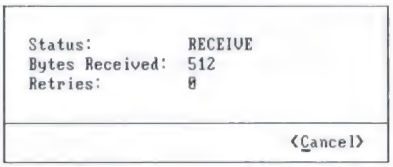
1. Connect to the information service, bulletin board, or other PC.
2. Request that the sender send the file (start XMODEM transfer).
3. From the Transfer menu, choose Receive Protocol.
4. In the dialog box, type a name for the file.
5. Select the appropriate Format: Binary or Text.
6. Press ENTER.

During the transfer, a status box displays to tell you the status of the transfer, how many bytes have been transmitted, and how many errors and retries have occurred. The Transfer status line will alternate between RECEIVE and WAITING as Works receives the file.

When Works has received the file, the Transfer status line changes to TRANSFER SUCCESSFUL.

If more than ten errors occur when receiving a block of the file, Works will cancel the transfer. When the transfer is successfully completed, press ENTER to continue with your communications session.

To cancel the transfer at any time, press ESCAPE or ENTER, and choose OK when Works asks you if you want to cancel the transfer.



For information on	See
File types	ASCII File Binary File Text File
Protocol file transfers	Protocol Receive Protocol Command XMODEM Protocol

Record Sign-On Command (Connect Menu)

The Record Sign-On command records a sign-on sequence for later playback. The sign-on sequence is stored as part of the Communications file.

For information on	See
Sign-Ons	Recording a Sign-On Signing On Sign-On Command

Recording a Sign-On

With the Record Sign-On command, you can record the sign-on sequence you use when starting to communicate with an information service. After you have recorded the sequence, you can sign on with one command instead of entering your identification name and password each time.

The sign-on sequence you record becomes part of the Communications file you set up for a particular host. When you choose Record Sign-On, Works begins recording your entries and the service's responses. Works records the following:

- Choosing the connect command.
- Everything you type.
- All prompts from the information service (last non-blank line in the host's response to your last entry).
- Choosing the Disconnect command.

You can use this command to record other sequences besides sign-ons. You can store any series of prompts and responses you would like to play back automatically, such as an inquiry you frequently make after you are logged onto a service.

Some things to note about using Record Sign-On:

- You can store only one sign-on sequence per Communications file. If you choose Record Sign-On when one already exists, you will replace the existing sign-on sequence.
- If you change your password or other responses, you must re-record the sign-on sequence.
- You must also re-record the sequence if the prompts from the host change. Works won't recognize the new prompts.
- Automatic sign-on will not work if the prompts from the host vary between sessions, such as if the date or time is included as part of the prompt.

Tip

To work around this, connect and get the inconsistent prompt from the host. Then, start recording. Press ENTER to get another (usually more consistent) prompt from the host and complete the sign-on.

When you use the sign on, choose Sign-On before connecting, and choose YES when Works asks if you want to connect. The sign-on should complete normally.

To record a sign-on sequence

1. From the Connect menu, choose Record Sign-On.
2. The status line displays RECORD.
3. Sign-on as usual.

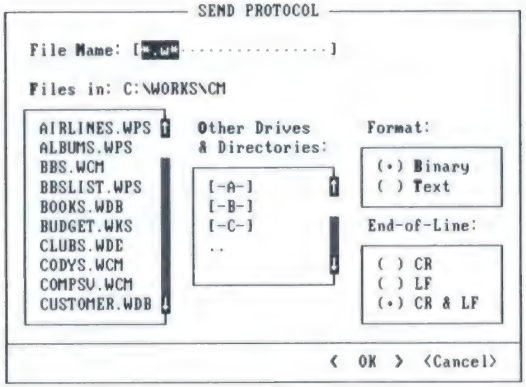
To stop recording a sign-on sequence

1. Press ESCAPE and choose YES when Works asks if you want to stop recording.

For information on	See
Playing back sign-ons	Signing On Sign-On Command

Send Protocol Command (Transfer Menu)

The Send Protocol command sends (uploads) a file from your disk to another computer. Works sends the file with XMODEM error-detection and correction protocol.



Format - Binary Select this option if you are sending a computer program, formatted Works file, or other formatted file.

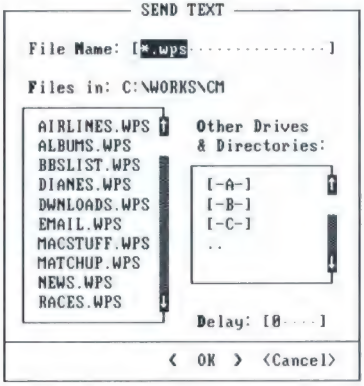
Format - Text Select this option if you are sending a text file (contains only ASCII characters, such as a Works file saved unformatted).

End-of-Line When sending text files, you can control the end-of-line characters used in the file. Select a combination (CR, LF, or CR&LF) that matches the type of line terminations used by the host (use CR&LF if not sure).

For information on	See
File types	ASCII Files Binary Files Text Files
Sending files with XMODEM protocol	Protocol Sending Files XMODEM Protocol

Send Text Command (Transfer Menu)

The Send Text command sends an ASCII text file to another computer with no error-correction protocol.



Delay Controls how long Works will pause at the end of each line of text it transmits. This option is useful when the host computer is having trouble "keeping up with" (processing) text at the rate you are sending it. The number you enter represents 1/10th of a second. For example, enter 1 to make Works pause 1/10th of a second after it sends each line.

For information on	See
Sending text files	Sending Text

Sending Files (XMODEM Protocol)

Use the Send Protocol command to send (upload) a complete file to another computer.

Works uses XMODEM error-detection and correction protocol to send the file. The other computer must also support XMODEM protocol, and be set to receive at the time you send the file.

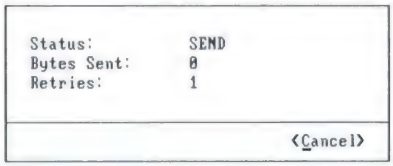
When sending text files, you can change the end-of-line characters used at the end of each line of the file. This allows you to send text files to computers that have different end-of-line requirements.

To send files (XMODEM protocol)

1. Connect to the other computer.
2. Tell the other computer to get ready to receive.
3. From the Transfer menu, choose Send Protocol.
4. Select or type in the name of the file you want to send.
5. Select the appropriate file type.

   If sending a text file, select one of the end-of-line character options if necessary. Use CR&LF if not sure.
6. Press ENTER.

During the transfer, a status box displays to tell you the status of the transfer, how many bytes have been transmitted, and how many errors and retries have occurred. The Transfer status line will alternate between SEND and WAITING as Works sends the file.



When Works has sent the file, the Transfer status line displays TRANSFER SUCCESSFUL.

If more than ten errors occur when sending a block of the file, Works will cancel the transfer. When the transfer is successfully completed, press ENTER to continue with your communications session.

To cancel the transfer at any time, press ESCAPE or ENTER, and choose OK when Works asks you if you want to cancel the transfer.

For information on	See
Sending files	Send Protocol Command Protocol XMODEM Protocol

Sending Text

The Send Text command is useful for sending large amounts of text faster than you can type. First make a file with the Word Processor, then save it with the Format Text or Format Plain option in the Save As command on the File menu. You can then send the file to an information service, bulletin board, PC, or mainframe, just as if you were typing it. This is useful for composing electronic mail messages, and saves being charged for information service connect time as you compose messages.

Note that the text may be prone to transmission errors, because it is sent without XMODEM error-correction protocol. If you are sending binary files or formatted Works files, you must use the Send Protocol command.

To save a Word Processor file to send as text

1. From the File menu, choose Save As.
2. Select Format Text or Format Plain.

> **Note** Format Text places a carriage return (CR) and line feed (LF) at the end of each paragraph. Format Plain places a CR and LF at the end of each line. Format Plain converts top and bottom margins to blank lines. (To eliminate the spaces and blanks, set margins to 0 with the Layout Command on the Print Menu.)

3. Type in a new name for the file if you want to save the formatted version.
4. Press ENTER.

To send a text file

1. Connect to the other computer.
2. From the Transfer menu, choose Send Text.
3. Select or type in the name of the file you want to send.
4. Enter a delay if appropriate.
5. Press ENTER.

Works will begin to send the file out to the other computer, line by line. You should see each line displayed on your screen as it is sent. The SEND message displays on the status line.

To cancel sending, press any key and choose YES when Works asks if you want to stop sending text.

For information on	See
End-of-line delays	Delay

Setting Up for Communications

The key to a successful communications session is matching various settings with the computer you want to exchange information with. Each computer may have different requirements, but you usually don't have to adjust all of the different settings to establish a connection successfully.

The most important settings are Baud Rate, Data Bits, Stop Bits, and Parity. Many information services and bulletin boards are standardizing with eight data bits, one stop bit, and no parity. These are the settings Works uses. You may find that in many cases all you have to do to make a new Communications file is enter the phone number and adjust the baud rate if necessary.

Creating or Opening a Communications File

The first step in setting up for communications is to open a Communications file. You can start from scratch, or open a file you set up earlier.

To create a new Communications file

1. From the File menu, choose New.
2. When the New dialog box appears, select Communications and press ENTER.

Works creates a new Communications file, and names it COMM1.WCM.

To open an existing Communications file

1. From the File menu, choose Open.
2. When the Open dialog box appears, select the name of the Communications file you want to open. All Communications files have the extension .WCM.
3. Press ENTER.

Works opens the designated Communications file.

Adjusting Settings for Different Communications Sessions

Once you have the Communications file open, you need to determine which settings are the right ones for your particular situation. You need to find out the requirements of the computers, modems, and software that will make up your communications link, and adjust the settings accordingly.

Settings for information services

Information services will send you the appropriate settings and phone numbers when you subscribe. Set up a Communications file with these settings in order to call the service.

Settings for PC-to-PC

If you are calling another PC, contact the other PC user and agree on settings. If they have Works, too, you should both check the Local Echo box in the Options Terminal dialog box, so that you will be able to see the characters you are typing.

If the lines of text you send or receive overwrite each other, use the Add to Incoming Lines setting (Terminal command) to select LF, so Works will insert a line feed each time a CR is sent or received.

Settings for minicomputers and mainframes

If you are calling a mainframe or minicomputer, you may need to contact the system administrator to find out the computer's communications requirements. Find out if the computer works best with VT52- or ANSI (VT100)-type terminals, and choose the corresponding Terminal Type setting. Check the Full Screen setting in the Options Terminal dialog box so that you can use the whole screen during the emulation.

When you adjust your communications settings, you use three commands on the Options menu:

- Communication
- Phone
- Terminal

To adjust communications settings

1. From the Options menu, choose Communication.
2. Select Baud Rate. Type a number between 50 and 9600.
3. Select Data Bits. Select 7 or 8.
4. Select Stop Bits. Select 1 or 2.
5. Select Handshake. Select XOn/XOff, Hardware, or None.
6. Select Parity. Select None, Odd, Even, Mark, Mask, or Space.
7. Select Port. Select COM1 or COM2.
8. Press ENTER.

To adjust phone settings

1. From the Options menu, choose Phone.
2. Select Phone Number. Type a number to dial.
3. Select Dial Type. Select Tone or Pulse.
4. If you are expecting a call from another computer, select Automatic Answer.
5. Select Modem Setup. Type optional modem setup commands.
6. Press ENTER.

To adjust terminal settings

1. From the Options menu, choose Terminal.
2. Select Terminal Type. Select VT52 or ANSI.
3. Select Full Screen, if desired.
4. Select Local Echo, if necessary.
5. Select Wraparound, if necessary.
6. Select Add to Incoming Lines, if necessary. Select Nothing, CR, or LF.
7. Select Keypad Alternate, if appropriate, during terminal emulation.
8. Select Cursor Alternate, if appropriate, during ANSI terminal emulation.

Saving Your Settings

Once you have your settings right for a particular host, you can save them in a Communications file. Then, when you want to call that computer again, you just open the proper file and choose Connect.

To save settings in a Communications file

1. From the File menu, choose Save As.
2. Type a filename that describes the host, PC, or service.
3. Press ENTER.

For information on	See
Calling different computers	Calling a Mainframe or Microcomputer Calling a Personal Computer Calling an Information Service
Details about settings	Individual topics for each setting

Signing On

To sign on is to enter your identifying name or number and password when a computer prompts you for them. With Works, you can record a sign-on sequence for each computer you call (Record Sign-On command), and play it back automatically (Sign-On command).

When playing back a recorded sign-on, make sure that you start playing back the sequence at the same stage in the sign-on procedure that you started recording it. For example, if you chose Record Sign-On after the computer displayed the prompt ENTER LOGIN:, next time be sure that you choose the Sign-On command after the computer displays this prompt.

If you are not currently connected and try to play back a sign-on sequence which was recorded when you were connected, Works will tell you that you must be connected and give you the option to do so.

If it appears that the sign-on sequence is not working, you can cancel it by choosing Sign-On again, or by pressing the ESCAPE key and responding to the alert box that displays.

To play back a recorded sign-on

- From the Connect menu, choose Sign-On.

The status line displays PLAY.

To cancel a sign-on in progress

- Press ESCAPE when the sign-on is playing back, and choose YES when Works asks if you want to stop the sign-on.

For information on	See
Recording sign-ons	Record Sign-On Command Recording a Sign-On

Sign-On Command (Connect Menu)

The Sign-On command automatically plays back a recorded sign-on sequence.

For information on	See
Automatic sign-on	Recording a Sign-On Signing On

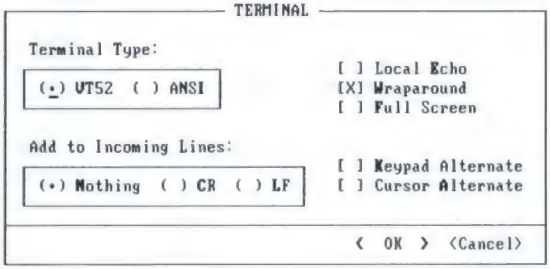
Stop Bits (Options Menu, Communication Dialog Box)

Stop bits indicate where one transmitted character ends and another begins. Set to match the requirements of the host with which you are communicating. One stop bit is the usual setting, but some hosts may require two.

For information on	See
Communications settings	Communication Command Setting Up for Communications

Terminal Command (Options Menu)

The Terminal command controls how your PC responds to and displays the data sent to it by another computer during a communications session.



Terminal Type Select the type of terminal you want to emulate or communicate with. If not sure, select VT52. This setting determines if your PC will respond to ANSI (VT100/VT220) control sequences or VT52 control sequences sent from the host computer.

Add to Incoming Lines Use this setting if you need to add carriage return (CR) or line feed (LF) characters to the end of each line of text another computer sends you. If the lines are overwriting each other, select LF. If the lines break and shift down a line in the middle of the screen, select CR. If the text is double-spaced, select Nothing or CR.

Local Echo Select this setting if the host does not automatically echo back the characters you type in. With your computer in local echo mode, the characters you type are displayed on your screen and are sent out to the other computer.

When not checked, your PC is in remote echo mode (you will only see the characters you type if the host echoes them back to you).

Wraparound When checked, incoming lines of text longer than the width of your screen will automatically "wrap" to the next line.

Full Screen Makes the menu bar, message line, and status line disappear when you are connected, allowing you to use the full screen for communications. Use Full Screen when doing terminal emulation.

Keypad Alternate When checked, and NUMLOCK is on, this option puts your keypad into Application mode. Applies when you are doing VT52 or ANSI terminal emulation.

Cursor Alternate When checked, and NUMLOCK is off, this option puts cursor keys into cursor key application mode. This applies only when you are doing ANSI terminal emulation.

For information on	See
Terminal settings	Add to Incoming Lines Cursor Alternate Full Screen Keypad Alternate Local Echo Wraparound

Terminal Type (Emulation)

Emulation means that your PC can mimic different types of terminals when connected to a host computer. Your computer will be able to respond to commands from the host that are usually intended for terminals. When emulating a terminal, you can use your computer to run programs on host computers such as mainframes or minicomputers, which usually communicate with terminals.

You can set your computer to emulate two different types of terminals:

VT52 = Your PC will mimic a VT52 terminal when you are connected to a host that uses a VT52 terminal driver program.

ANSI = Your PC will mimic a VT100, VT220, or VT240 terminal when you are connected to a host that uses an ANSI terminal driver program.

For information on	See
Terminal emulation	Appendix C, "Modems, Cables, and Terminal Emulation"
Terminal settings	Terminal Command Setting Up for Communications Individual topics for each setting

Text File

A text file contains only ASCII characters. This is the type of file that results when you save a Works document as "text" or as "plain."

For information on	See
Sending text files	Send Text Command Sending Text Sending Files

Upload

To upload is to send a file stored on your computer's disk out to a host computer. To upload any file to a PC, information service, or bulletin board that supports XMODEM protocol, use the Send Protocol command on the Transfer menu. To send a text file (for sending electronic mail, posting a message on a bulletin board, etc.), use the Send Text command on the Transfer menu.

For information on	See
Sending files	Sending Text Sending Files

Wraparound (Options Menu, Terminal Dialog Box)

The Wraparound setting automatically adjusts incoming lines that are longer than the width of your display screen so that they will fit on your screen.

For information on	See
Terminal options	Individual topics for each setting Terminal Command

XMODEM Protocol

XMODEM Protocol is the error detection and correction method Works uses when you send and receive files with the Send Protocol and Receive Protocol commands on the Transfer menu. Works uses Checksum XMODEM, not CRC XMODEM.

For information on	See
Sending or receiving with XMODEM	Protocol Receiving Files Sending Files

Communications

Using the Tools Together

Works makes it easy to exchange information between the different tools, so that you can use the same information in different ways without having to enter it into each tool separately.

This chapter explains how to integrate information by copying information between the Works tools, inserting charts into Word Processor files, incorporating Database reports into other Works files, and incorporating information from Communications sessions into Works files.

For information on creating forms, customized letters, and mailing labels by combining information from the Word Processor and the Database, see Chapter 4, "Word Processor Reference." For information on using Works with other applications, see Appendix E, "Using Works with Other Applications."

16 Exchanging Information Between Tools

With Works, you can integrate information from one tool with information from another tool. You can open more than one type of file at once, and switch easily between them with commands from the Window menu. Works makes it easy to get information from one tool to another, and to integrate results from the different tools for analysis or presentation. For example, you may want to include a Spreadsheet chart in a Word Processor file, or copy a table of numbers from a Word Processor file into a spreadsheet to perform calculations.

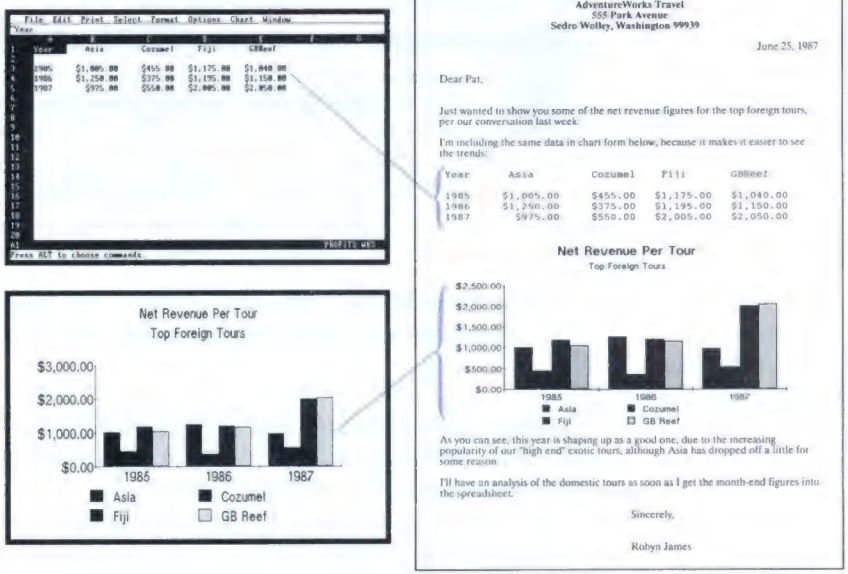
You use the Copy command for exchanging information between tools, just as you copy information from one location to another within the same file. You can copy information between Spreadsheet, Database, and Word Processor files. After you copy from one file to another, don't forget to repeat the copy procedure if you change the file you copied from.

Note Use the Move command to move information within a file, but not between files or between the different Works tools. To move information from one file to another, use Copy and then delete the information in the original file.

You can also include Database reports in Spreadsheet, Word Processor, or other Database files, insert Spreadsheet charts into Word Processor files, and incorporate the information you receive with Communications into other Works files.

Integrating Information in the Word Processor

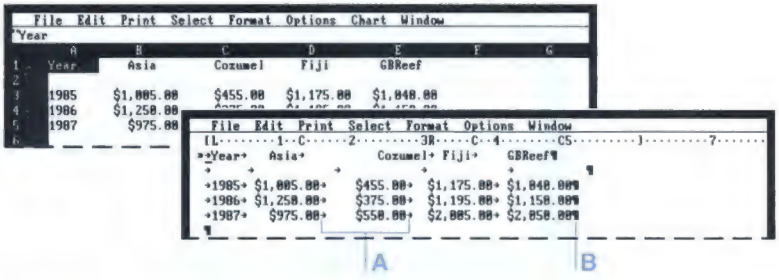
The Word Processor is well-suited for bringing together information from the different Works tools. You can add charts, reports, spreadsheets, and databases to a Word Processor file, and then edit and format the information as desired.


File Edit Print Select Format Options Chart Window
Year
Year Asia Cozumel Fiji GBReef
1985 $1,005.00 $455.00 $1,175.00 $1,040.00
1986 $1,250.00 $375.00 $1,195.00 $1,150.00
1987 $975.00 $550.00 $2,005.00 $2,050.00
Press ALT to choose commands.
Net Revenue Per Tour
Top Foreign Tours
$3,000.00
$2,000.00
$1,000.00
$0.00
1985
1986
1987
Asia
Cozumel
Fiji
GB Reef
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
June 25, 1987
Dear Pat,
Just wanted to show you some of the net revenue figures for the top foreign tours, per our conversation last week.
I'm including the same data in chart form below, because it makes it easier to see the trends:
Year Asia Cozumel Fiji GBReef
1985 $1,005.00 $455.00 $1,175.00 $1,040.00
1986 $1,250.00 $375.00 $1,195.00 $1,150.00
1987 $975.00 $550.00 $2,005.00 $2,050.00
Net Revenue Per Tour
Top Foreign Tours
$2,500.00
$2,000.00
$1,500.00
$1,000.00
$500.00
$0.00
1985
1986
1987
Asia
Cozumel
Fiji
GB Reef
As you can see, this year is shaping up as a good one, due to the increasing popularity of our "high end" exotic tours, although Asia has dropped off a little for some reason.
I'll have an analysis of the domestic tours as soon as I get the month-end figures into the spreadsheet.
Sincerely,
Robyn James

Copying from the Spreadsheet or the Database to the Word Processor

When you copy information from the Spreadsheet or the Database to the Word Processor, Works arranges the information into a table of rows and columns, separating the items in the columns with tabs, and placing paragraph marks at the end of each row.

Works sets tab stops to match the position, alignment, and width of the spreadsheet or database cells. You can change the distance between the tab stops, if necessary. For information about changing the distance between tab stops, see the "Tab Stops and Tables" topic in Chapter 4.



A Works places a tab after each cell from the spreadsheet...

B ...And ends each row with a paragraph mark.

Works copies the spreadsheet or database values into the Word Processor as text. You can edit the information from the spreadsheet or database as you would any other text in a Word Processor file.

Character styles (bold, italic, underline) from the Spreadsheet or Database file are preserved in the Word Processor file, as are the paragraph alignments (left, right, center). The copied text takes on the font of the part of the Word Processor file you copied it into.

To copy from the Spreadsheet or Database to the Word Processor

Before copying, make sure that both the Word Processor file and either the Spreadsheet or Database file are open. If you are using a Database file, make sure you are in the List screen.

1. Activate the Spreadsheet or Database file.
2. Select the information you want to copy into the Word Processor file.
3. From the Edit menu, choose Copy.
4. Switch to the Word Processor file you want to copy the information into.
5. In the Word Processor file, move the cursor to where you want to insert the spreadsheet or database information.
6. Press ENTER.

Works places the text from the spreadsheet or database into a table in the Word Processor file.

Inserting a Spreadsheet Chart into a Word Processor File

If you have a printer that can print both text and graphics (such as a dot matrix or laser printer), you can insert a chart you've created with Charting into a Word Processor file and print the results. You can adjust the size of the chart as desired. You also have two options for orienting the chart on the page: Portrait (the default setting) places the chart on the page vertically. Landscape places the chart on the page sideways (horizontally).

Because Works gets the chart from an active Spreadsheet file when you print it, your chart will always reflect the latest changes you made to the spreadsheet.

To insert a Spreadsheet chart into a Word Processor file

Before inserting, make sure that both the Spreadsheet file with the chart you want, and the Word Processor file you want to insert the chart into are open.

1. Activate the Word Processor file.
2. Move the cursor to where you want to insert the chart.
3. From the Edit menu, choose Insert Chart.
4. In the Spreadsheets list box, select the spreadsheet that has the chart you want to use.

   Works displays a list of charts for that spreadsheet in the Charts list box.
5. In the Charts list box, select the chart you want.
6. Press ENTER.

   Works inserts a chart placeholder in the Word Processor file.

The chart placeholder looks like this:

CHART FILENAME.EXT CHARTNAME

FILENAME.EXT is the name of the spreadsheet; CHARTNAME is the name of the chart.

You can select the chart placeholder and move it around as needed. To change the chart placeholder, you select it and delete it, then use the Insert Chart command again to put in a different one.

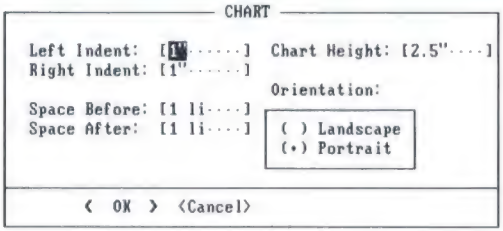
File Edit Print Select Format Options Window
We have included the following chart to help you plan for the climate:
chart TEMPS.WKS:CHART1
A
We have also included ferry schedules to help you plan your daytrip to Victoria.
Pg 1/2
TEMPLET.WPS

A The chart placeholder shows the name of the spreadsheet and associated chart.

When you have the chart placeholder where you want it, you can adjust the size of the chart.

To size a chart in a Word Processor file

1. Activate the Word Processor file.
2. Move the cursor to the chart placeholder.
3. From the Format menu, choose Paragraph.
   Works displays the Chart dialog box.



4. In the Left Indent and Right Indent text boxes, type measurements for the left and right indents (in inches from the current margins).

   These measurements determine the width and placement of the chart.

5. In the Chart Height text box, type a measurement in inches for the height of the chart.

   Height refers to the length of the X-axis.

6. In the Space Before and Space After text boxes, type the number of lines you want to leave before and after the chart.
7. Under Orientation, select Portrait or Landscape, depending on whether you want the chart oriented vertically or horizontally on the page.
8. Press ENTER.

Printing a Word Processor File that Contains a Chart

When you print a Word Processor file with a chart in it, Works has to be able to access the Spreadsheet file with the chart you want to include.

Some points to remember:

- Both the Word Processor and Spreadsheet files must be open.
- You need a printer that can print both graphics and text, such as a dot matrix or laser printer.
- Specify the .PRD file for your printer in the Word Processor with the Select Text Printer command (on the Print menu).
- Specify the .GPD file for your printer in Charting with the Select Graphics Printer command (on the Print menu).

To print a Word Processor file that contains a chart

1. Open the Spreadsheet file that contains the chart you want to insert.
2. Open the Word Processor file.
3. From the Print menu, choose Print.

Inserting a Database Report Summary into a Works File

You may want to include a report summary derived from a Database file in a Word Processor or Spreadsheet file, or in another Database file. Before you can insert the report summary, you have to save it in a file.

Note The report summary file that Works creates is similar to the file created when you select the Print All But Record Rows option (in the Print dialog box) to print a report.

To save a report summary in a file

1. Activate the Database file that contains the report you want to use.
2. From the Report menu, choose Save As.
3. In the Save As text box, type in a name for the report summary file.
4. Press ENTER.

Works creates a text file from the report. The file contains all but the record rows of the report in a format you can use in the Word Processor, Spreadsheet, or Database.

To open a report summary file

1. From the File menu, choose Open.
2. In the File Name text box, type the filename for the report summary file.
3. Press ENTER.
4. Works displays the Open As dialog box.
5. Select the type of file you want the report summary file to be: Spreadsheet or Database.

> *Note* Once the report summary is in a Spreadsheet or Database file, you can copy it to a Word Processor file.

6. Press ENTER.

Works opens the report summary file as the type of Works file you selected.

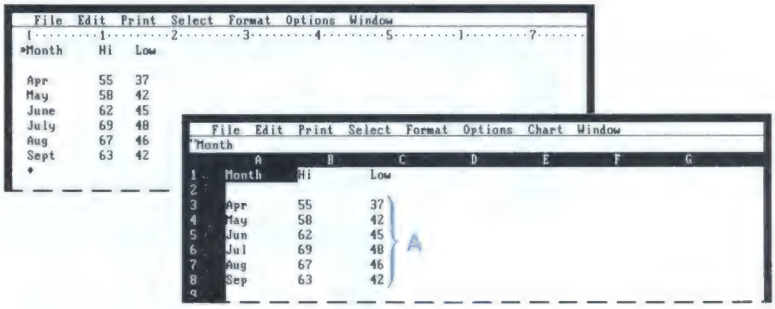
You can now copy the text of the file to another Works file, if desired. The procedure is identical to that in "Copying from the Word Processor to the Database or the Spreadsheet" or "Copying Information Between the Database and the Spreadsheet" in this chapter.

Copying from the Word Processor to the Database or the Spreadsheet

You may have information in a Word Processor file that you want to place in a spreadsheet or database, or may want to move information back and forth between spreadsheets and databases.

When you want to copy information from a Word Processor file to a Database or Spreadsheet file, you have to have it organized in rows and columns, with tabs and paragraph marks, so that Works can divide the information up into the fields and records of a database, or the rows and columns of a spreadsheet.

If the text in your Word Processor file is not organized this way, you need to edit it so that tab marks replace the spaces, commas, or other characters that separate the groups of information in the Word Processor file. Make sure that each line ends with a paragraph mark.



A Works changes each entry in a Word Processor table into a cell in the spreadsheet.

To copy from the Word Processor to the Database or the Spreadsheet

Before copying, make sure that both the Word Processor file and either the Spreadsheet or the Database file are open. If you are using a Database file, make sure you are in the List screen.

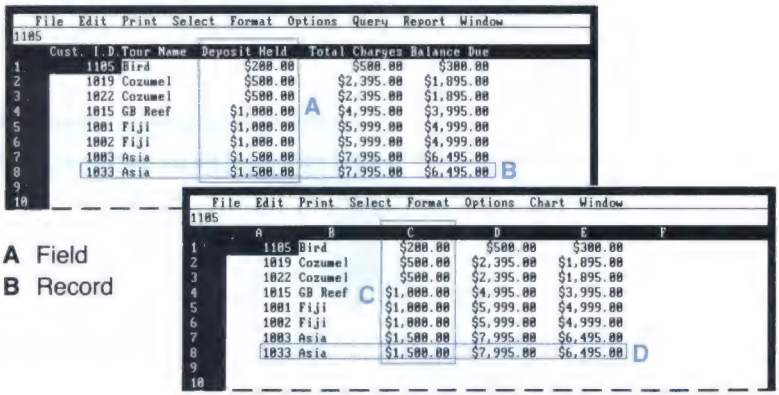
1. Activate the Word Processor file.
2. Select the information you want to copy into a spreadsheet or database.
3. From the Edit menu, choose Copy.
4. Switch to the Spreadsheet or Database file.
5. In the Spreadsheet or Database file, select the cell at the upper-left corner of the area you want to copy the Word Processor information into.
6. Press ENTER.

Works places the values from the table into the cells of the spreadsheet or database. Note that Works does not transfer the character formats from your Word Processor file to the Spreadsheet or Database file.

Note Works fills the cells to the right, and records or rows down, replacing any current values with the new values. If you do not want to lose the current cell or field values, be sure to insert the copied information at the bottom of the database or spreadsheet, or leave enough empty cells to accommodate the incoming values.

Copying Information Between the Database and the Spreadsheet

When you copy information from the Database to the Spreadsheet, each database record becomes a spreadsheet row, and each database field becomes a column in the spreadsheet. The reverse is true when you copy information from the Spreadsheet to the Database. Each spreadsheet row becomes a database record, and each spreadsheet column becomes a database field.



A Field
B Record
C Column
D Row

To copy information between the Database and the Spreadsheet

Before copying, make sure that both the Database and Spreadsheet files are open. In the Database file, make sure you are in the List screen.

1. Activate the file that has the information you want to copy.
2. Select the fields and records or rows and columns you want to copy.
3. From the Edit menu, choose Copy.
4. Switch to the file you want to copy the information into.
5. Select the cell in the upper-left corner of the area you want to copy the information into.
6. Press ENTER.

Works copies the database information into the spreadsheet, or the spreadsheet information into the database.

Note Works fills the cells to the right, and records or rows down, replacing any current values with the new values. If you do not want to lose the current cell or field values, be sure to insert the copied information at the bottom of the database or spreadsheet, or leave enough empty cells to accommodate the incoming values.

Using Information from Communications Sessions

You can incorporate the information you receive during Communications sessions into Works files. There are two different kinds of files that you can work with:

- Captured text files (such as data from information services)
- Spreadsheet, Database, Word Processor, or Communications files that other Works users send to you

Incorporating Captured Text Files into Works Files

When you capture text from a Communications session with an information service, bulletin board, or other source, you can use the text in a Works file. When you open the captured text file, Works asks you if you want to open the file as a Word Processor, Spreadsheet, or Database file.

To open a captured text file

1. From the File menu, choose Open.
2. In the File Name text box, type the filename of the captured text file.
3. Press ENTER.

   Works displays the Open As dialog box.
4. Select the type of file you want the captured text to be: Word Processor, Spreadsheet, or Database.
5. Press ENTER.

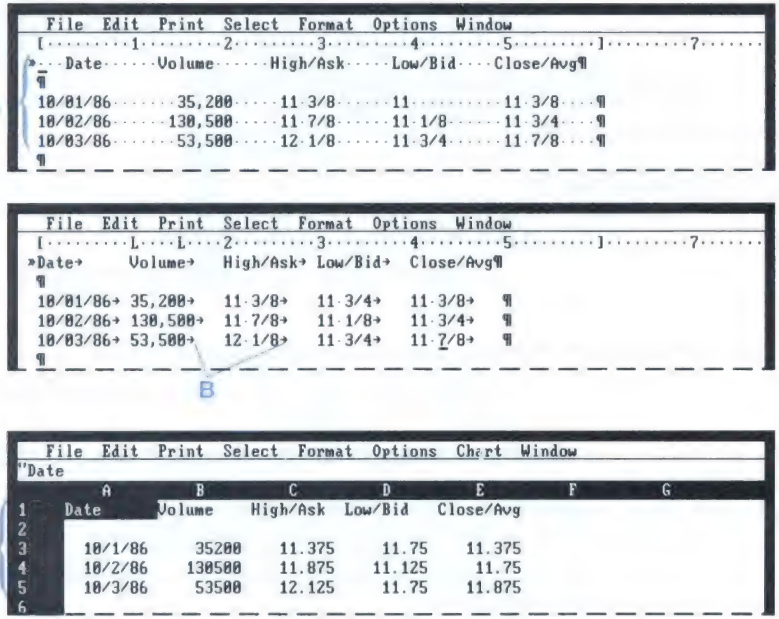
Works opens the captured text file as the type of Works file you selected.

If you open the file as a Word Processor file, you can edit it to remove any information you don't need, format it, or just select portions of it to copy into other Works files.

If the information in the file is arranged in columns and rows divided by tab and paragraph marks, you can open the file directly either as a Spreadsheet or a Database file.

If the captured information is not arranged in columns and rows, you have to open the file as a Word Processor file first, add tab and paragraph marks, then copy the results into a Spreadsheet or Database file. See the procedures under "Copying from the Word Processor to the Database or the Spreadsheet" earlier in this chapter.

Important If the captured information is arranged in columns and rows, there may be spaces between columns rather than tabs. In that case, you must replace spaces with tabs. For example, if you want to put stock quotes you captured with Communications into a spreadsheet, you need to replace the spaces between each stock quote with tab marks without affecting the spaces within each quote. To do this, you have to tell Works to "replace all occurrences of more than one space with a tab." Open the captured text as a Word Processor file and use the Replace command to replace "more than one space" (^w) with a tab (^t). For more information on replacing special characters, see the "Searching and Replacing" topic in Chapter 4, "Word Processor Reference."


File Edit Print Select Format Options Window
Date Volume High/Ask Low/Bid Close/Avg
10/01/86 35,200 11 3/8 11 11 3/8
10/02/86 130,500 11 7/8 11 1/8 11 3/4
10/03/86 53,500 12 1/8 11 3/4 11 7/8
A
File Edit Print Select Format Options Window
Date Volume High/Ask Low/Bid Close/Avg
10/01/86 35,200 11 3/8 11 3/4 11 3/8
10/02/86 130,500 11 7/8 11 1/8 11 3/4
10/03/86 53,500 12 1/8 11 3/4 11 7/8
B
File Edit Print Select Format Options Chart Window
"Date
A B C D E F G
1 Date Volume High/Ask Low/Bid Close/Avg
2
3 10/1/86 35200 11.375 11.75 11.375
4 10/2/86 130500 11.875 11.125 11.75
5 10/3/86 53500 12.125 11.75 11.875
6
C

A Captured stock quote text with spaces between entries
B Spaces converted to tabs with Replace command
C Formatted stock quotes copied into spreadsheet

Using Works Files Sent to You

When someone sends you a Works file (a Word Processor, Spreadsheet, Database, or Communications file), you just open it and use it as if you had created it yourself.

Index

1st Field list box 440
1st Letter check box 478, 480
1st line indent marker (!) 91
1st Line Indent text box 83, 92-93
1st Line option 117
1st Page Number text box 41-42, 115
1st to 6th Y-Series commands 280
100% bar chart 262, 280
100% Bar command 279-280
100% scaling 320

A1:B10 message 225
Abbreviations, measurement unit 47, 110
ABS (absolute value) function 229
Absolute reference 159-160, 184-185, 214-215
Absolute value (ABS) function 229
ACOS (arccosine) function 230
Acoustic coupler
  See also Appendix C
  description 515
Acronym 69
Active cell
  cell selecting 161, 220
  with formula bar 156, 340
Active chart 285
Active file 31
Add button 139-140
Add option 70
Add to Incoming Lines option 533
Add to Incoming Lines setting 459, 513
Add Values option 172
Adjusting settings, Communications 529-530
Alignment
  center
    footer 86, 89
    header 86, 89
    paragraphs 66-67
    shortcut key (CONTROL+C) 101
    tab stop 149
  default paragraph 103
  footer 42-43, 86, 89
  header 42-43, 86, 89
Alignment *(continued)*
  horizontal 76
  justified 65-66, 99, 101
  left 66, 101, 103, 149
  paragraph 59, 65-66, 540
  right 65-66, 101, 143, 149
  tab stops 146
  text 65-66, 76-77
  value 164, 168, 359, 445
  vertical 77
Alignment list box 359
Alignment option
  Paragraph command 117
  Style command 226, 427, 481
  Tabs command 149
ALT key
  See also specific key combination
  button selecting 14
  color selecting 46
  extended characters 151
  menu bar activation 6
  Microsoft Works startup 2-3
  option selecting 10, 13
  tutorial selecting 35
ALT+174 key, left double-angle bracket 75
ALT+175 key, right double-angle bracket 75
ALT+BACKSPACE key, undo 102
ALT+O, open Options menu 511
AND criteria 411
ANSI terminal 499, 507, 513, 533-534
Answer mode 499
Append option 502-503
Appending captured text 502
Apply Query command 355, 359-360
Arccosine (ACOS) function 230
Arcsine (ASIN) function 230
Arctangent (ATAN) function 230
Arctangent, x/y coordinates (ATAN2) function 230-231
Area line chart 263, 281
Area Line command 281
Argument
  See also specific argument
  defined 229
Argument *(continued)*
  description 193, 386
Arrow (double), automatic page break designator 112
Ascending option 423
ASCII file 23, 496, 534
Assistance with Microsoft Works
  See Help; Message line; Tutorial
Asterisk (*)
  parity error notation 515
  placeholder 97-98
  special page character 115
  wildcard character 28, 219, 418
AT commands 486
ATAN (arctangent) function 230
ATAN2 (arctangent, x/y coordinates) function 230-231
Auto-answer modem 495
Automatic Answer option 517
Automatic Answer setting 496
Automatic answering 496-497, 517
Automatic backup 24, 45, 48
Automatic calculation 169
Automatic page breaking
  See Page breaking
Automatic sign-on 493
Average of values (AVG) function 231
AVG (average of values) function 231
AVG statistic 443, 452
Axis 273, 282-283, 303

BACKSPACE key
  character deleting 11, 72, 164, 180, 349, 379
  clearing cells 186, 379-380
  defined 102
  error deleting 151
  paragraph joining 120
  text deleting 55, 72, 161
  typing text 54
Backup
  automatic 24, 45
  check box 25
  file xxii, 24-25, 48-49
BACKUP sub-directory 24

Bar chart
Bar command 283-284
creating 287
default chart 271
description 260-262
Y-series formatting 275
Bar command 283-284
Base 10 logarithm function (LOG) 243
Baud Rate option 503
Baud Rate setting 497, 528
Binary file 497
Bit 507
Black & White chart display 297
Black and white monitor 46
Blank cell 231
Blank line 361-362
Blinking underline *See* Cursor
Bold check box 80
Bold letter method
activating menu bar 6
button selecting 14
command selecting 6-7
menu opening 7
option selecting 10, 13
Bold option 68, 226, 428, 481
Bold text 39, 57, 68, 101
Border 284
Bottom Margin text box 105
Bracket, double-angle 75
Brackets ([ ]), indent designator 91, 108
Break 438-440, 479-480
Break check box 478, 480
Break command 498
Breakfield 441, 478
Breaking pages *See* Page breaking
Bullet 90
Bulleted paragraphs 92
Bulletin board 491, 492, 494, 512
Button
See also specific button
command execution 14
description 9
selecting 14

Cable
See also Appendix B; Appendix C
connecting 498, 506
installing 487
CALC message 169, 225
Calculate Now command 168-169
Calculating 169
Calculation planning 160
Calling
incoming 495-496
information service 500-501
other computers 499-500
Cancel button
dialog box canceling 10, 14
Help canceling 34
printing canceling 45
Canceling
changes 181
commands 7, 10, 14, 71, 111
dialog boxes 10, 14, 81, 85
file transfers 521
Help 34
printing 45, 78, 107
scrolling xx
selection 100, 133
sign-on 531-532
spelling checker 140
tutorial index 36
CAPTURE message 501
Capture Text command 491, 501, 503
Captured text
appending 502
overwriting 502
procedure 501-503
tool integration 537-548
Caret (^), CONTROL key symbol 129
Carriage return (CR) 495, 533
Cash flow 240, 246
Category 260-261, 282, 314
Cell
active 156, 161, 220, 340
blank 231
clearing 186, 380, 454-455
copying 165-166, 174-175, 364, 446-447
creating 367-368
description 154-155, 338
editing 350, 379
erasing
contents 350
description 454
field formula 350
formatting 164-165, 191, 390, 461
location 159
locking 201, 210, 404
moving 202, 360, 399
protecting *See herein* locking
range 155
reference 155, 162-163, 183
Cell *(continued)*
screen positioning 344
searching 218
selecting
description 220, 323
on List screen 419
procedure 161, 220, 476
with mouse *See Appendix D*
unlocking 210, 404-405
width changing 429-431
Center alignment
footer 86, 89
header 86, 89
paragraphs 66-67
Center command 67
Centimeter 42, 47, 110
CGA (Color Graphics Adapter) card 46
Change button 140
Change option 69
Changing references 204
Character
definition 68
extended character set 151
filename 19
formatting 57-58, 67-68, 79-81
inserting 164
international 151
leader 146-147
size *See* Font
special
description 137
displaying 138
hiding 138
inserting 97-98
searching and replacing 129-130
style 540
Character command
description 67-68
format changing 79-81
Character command dialog box 79
Character dialog box
description 67, 74
viewing formats 78, 80-81
Character Format option 70
Chart *See* Charting
Chart dialog box 95, 542
Chart Height option 95
Chart Height text box 95, 276, 305, 543
Chart menu commands
Charting
Charts 170, 284-285

Chart menu commands *(continued)*
Charting *(continued)*
Define Chart command 265
Exit 296-297
Exit Chart 278
New 311
View 329-330
Spreadsheet
Charts 170
Define 179
New 206
View 227
Chart screen 265, 295
Chart Title text box 274, 303, 328
Chart Width text box 276, 305
Charting
active 285
categories 260
changing fonts 39-40
color 278, 285, 317
copying
description 285
procedure 286
to Word Processor 95, 541-542
creating 264-271, 286-290
data point 260
deleting 295-296
description xviii, 257-258
elements 258
exiting 278
formatting 274-275, 298-299
labeling 273-274, 302-304
layout specification 276-277
length 277
naming 284, 310-311
page layout 313-314
placeholder 94-95, 541-542
plotter 278, 317
positioning 305
printer selecting 37-38
printing
See also Appendix B
command description 315-316
graphics capabilities 37
plotter printing 278, 317
procedure 277, 316-317
ranges 259
selecting 323
size 95, 542-543
Speed Charting 286, 288-290
styles *See Appendix B*
titling 302-304
types 262-264, 271-272, 290
Charting *(continued)*
viewing 290, 329-330
width 277
Charts command 170, 284-285
Charts dialog box 310
Charts list box 94, 286, 311, 541
Charts option 94, 285
Check box
See also specific check box
backup 25
dash (−) 13
description 9
option reference 10
X, activation symbol 9
Check Spelling command 63, 69-70, 139
Check Spelling command dialog box 139
Checking spelling 63, 69-70, 139-142
Checksum XMODEM 519, 535
Choice argument 231
CHOOSE function 231
Choosing *See* Selecting
CIRC message 170, 225
Circular reference 170, 225
Clear All button 147
Clear All option 149
Clear button 147
Clear command 171, 186, 362, 445
Clear option 149, 445
Clearing
See also Deleting; Erasing
Database 362, 379-380
Reporting 445, 454-455
Spreadsheet 186
Clicking *See* Mouse
Clock 177
Close command 25, 50, 492
Closing files 25, 492
Codes, header and footer alignment 42-43
Colon (:)
field name designator 345, 361, 367
range reference 156
Color
chart 278, 317
description 285
Graphics Adapter card 46
monitor 46
option 45
screen 45, 46
selecting 46
settings 46
Colors list box 275, 292
Colors option 291, 293, 298
COLS (columns) function 232
Column
adding 462
copying 174
deleting 148, 179, 187, 455
description 155
freezing 195
hiding 197
inserting 198, 462-463
moving 203, 467-468
multiple 259
re-displaying hidden column 198
selecting 221 477
table 148
tool integration 545
width 227-228, 483
Column argument 239
Column command 171, 446
ColumnNumber argument 237
.COM extension 497
COM1 518
COM2 518
COMM1 .WCM file 528
Comma (,)
function syntax separator 229
inserting 362
Pause command symbol 517
with Dollar command 180
Comma command
cell formatting 165
description 171, 362, 446
number formatting 190, 389, 460
Comma format *See* Comma command
Command
1st to 6th Y-Series commands 280
100% Bar command 279-280
Apply Query command 355, 359-360
Area Line command 281
AT commands 486
Bar command 283-284
Bold command 66
Break command 498
Calculate Now command 168-169
Capture Text command 491, 501-503
Center command 67
Character command
description 67-68
format changing 79-81
Chart menu commands
See Chart menu commands

Command *(continued)*
Charts command 170, 284-285
Check Spelling command 63, 69-70, 139-142, 152
choosing commands 6-7
Clear command 171, 186, 362, 380, 445
Close command 26, 50, 492
Column command 171, 446
Comma command
cell formatting 165
description 171, 362, 446
number formatting 190, 389, 460
Communication command 489, 503-504
Connect command 495, 505-506
Connect menu commands *See* Connect menu commands
Copy command
See Copy command
Copy Special command
See Copy Special command
Data Format command 274-275, 291
Data Labels command 274, 294-295, 304
Data menu commands
See Data menu commands
Date command
See Time/Date command
Define Chart command 265
Define command 179, 295, 448
Define Form command 370
Define Query command 371
Define Report command 371-372
Delete command
column deleting 179, 187, 448, 455
defined 72, 372
field deleting 361, 380
label deleting 361, 380
record deleting 72, 372, 381, 416
row deleting 179, 187, 448, 455
text deleting 55-56, 72
undoing 152
Delete Page Break command 179-180, 207, 372, 449
description, command 4
Dial Again command 506, 508
DISKCOPY command (DOS) xxii

Command *(continued)*
Dollar command
cell formatting 165
currency symbol 48
description 180, 373, 449
example 158
number formatting 190, 389, 460
DOS command 29-30, 50
DOS DIR command xx
Double Space command 73, 136
Edit menu commands
See Edit menu commands
End Capture Text command 502
ERASE command (DOS) 25
executing commands 8
Exit Chart command 296-297
Exit command 8, 30, 50
Exit Design command 382
Exit Form Design command 371
Exit Query command 355, 382, 413, 448
Exit Report command 371, 455
Exponential command
cell formatting 165
description 187, 383, 456
number formatting 191, 389, 460
Field command 383
Field Name command 442-443, 451, 456
Field Summary command 442-443, 452, 457
Field Value command 442-443, 451, 457-458
File menu commands
See File menu commands
Fill Down command
cell copying 166
description 188, 387
multiple cell copies 363-364
row copying 174, 188
Fill Right command
cell copying 165
column copying 174, 188
description 188, 387
multiple cell copies 363-364
Fixed command
cell formatting 165
description 188, 387, 458
number formatting 190, 389, 460
Font command 188-189, 387-388, 458-459

Command *(continued)*
Footers command 86-87, 89
Format commands
See Format commands
Format Data command 308
Format For B&W command 297
Format menu commands
See Format menu commands
Freeze Titles command 194-195
General command
cell formatting 165
description 196, 390, 461
number formatting 190-191, 374, 388, 460
Go To command
See Go To command
Hayes command set 486, 515
Headers & Footers command
formatting 42
page layout 61
page numbering 115
procedure 86-90
Help Index command 32, 50
Hide Record command 392
Hi-Lo-Close command 301-302
Insert Chart command 94-95, 152, 541
Insert command
blank line inserting 361
column inserting 198
description 462
field inserting 393
record inserting 393-394
row inserting 463
Insert Field command 74-76, 96, 104, 152
Insert Page Break command
Database 394, 402-403
Reporting 463, 469-470
Spreadsheet 198, 206-207
Insert Special command 89, 97-98, 152
Italic command 99
Justified command 99
Layout command
chart layout 276
chart positioning 305, 313-314
description 50, 201, 398, 467
footer 87, 90
header 87, 90
margins 61, 108
page 40-41, 48, 50, 115, 206
pre-printed forms 76
report layout 467

Command *(continued)*
Left command 103
Legend command 266-268, 306-307
Line command 307-308
List Printer Formats command 308
Logical command
cell formatting 165
description 202, 398, 467
number formatting 191, 390, 461
Manual Calculation command 202
Manual Pagination command 108, 114
Mixed Line & Bar command 309-310
Modem Setup command 505
mouse selecting *See Appendix D*
Move command
cell moving 202, 360, 399
column moving 203, 467-468
description 398, 467
label moving 399
moving within file 538
record moving 398-399
row moving 203, 467-468
shortcut key (F3) 99
text moving 57, 111
undoing 152
Name command 203-205, 399-401
New command
chart creating 311
communications file creating 528
description 50, 206
file creating 17
file opening 26
report creating 469
Speed Charting 290
Normal Paragraph command 84, 112
Open command 26-29, 50, 544
Options menu commands
See Options menu commands
Other Font command 312
Paginate Now command 114, 116
Paragraph command
chart size 95, 542
description 116
format changing 83
hanging indents 93
options listing 117-118
page breaking 112-114
spacing between paragraphs 134-135

Command *(continued)*
Paragraph command *(continued)*
text aligning 77
unit specification 47
Pause command 504, 516
Percent command
cell formatting 165
description 208, 403, 471
number formatting 190, 389, 460
Phone command 489, 516-517
Pie command 314-315
Plain Text command 81, 120
Print Chart command 208
Print command
Chart printing 315-317
Database printing 357, 403-404
description 50, 121
form letter printing 77
Report printing 444, 471
Spreadsheet printing 167, 208-209
Word Processor file with chart printing 543
Print Labels command
description 121-122
form letter printing 96
label size 104
mailing label printing 106
options listing 122
unit specifying 47
Print menu commands
See Print menu commands
Print Merge command 74, 77, 96, 123
Print Report command 471
Protect command 201, 210, 404-405
Query command 77, 106
Query menu commands
See Query menu commands
Receive Protocol command 491, 510, 519-521, 535
Record command 416
Record Sign-On command 522-523, 531
Replace command 124, 127-128, 152, 548
Report menu commands
See Report menu commands
Reports command 472-473
Right Y-Axis command 317-318
Row command 217, 473

Command *(continued)*
Save All command 18, 24, 50
Save As command
backup file opening 24
Communications file saving 492
Communications settings saving 531
description 50, 125-126
directory changing 20, 27
drive changing 20, 27
extension specification 22
form letter saving 76
new file saving 18-19
report saving 475-476
report summary saving 544
saving to another directory 21
saving to another drive 21
template saving 150
text file saving 23
Save command
description 50
existing file saving 18, 23-24
Search command 126-127, 218-219, 416-418
Select Chart Printer command 38, 323
Select Graphics Printer command 543
Select menu commands
See Select menu commands
Select Printer command
See also Appendix B
description 50
Select Text Printer command
adding printer 38
changing printer 38
description 220, 419, 476
.PRD file specification 543
selecting commands 6-8
Send Protocol command 491, 524, 535
Send Text command 491, 525, 535
Series command 324
Set Print Area command 167, 221-222
Settings command
description 50
exiting Microsoft Works 30
making backup copies 24-25
measurement unit changing 42
Microsoft Works setting changing 46

Command *(continued)*
Shortcut commands 80
Show All Characters command 133, 144
Show All Records command 421
Show Border command 325
Show Field Name command 421-422
Show Formulas command 219, 222
Show Legends command 268, 325
Show Printer Fonts command 325
Show Ruler command 85, 91, 125, 133
Sign-On command 532
Single Space command 134-136
Sort command
Database sorting 347, 422-425
form letter sorting 77
mailing label sorting 106
pre-printed form sorting 77
Report sorting 437, 440, 478-480
Split command 8, 142-143, 223-224, 425-426
Stacked Bar command 326
Style command
aligning values 168, 359, 445
description 225-226, 427-428, 481
Switch Hidden Records command 415-416, 428
Tabs command
default tab stop 144
indenting 93
mailing labels 105
options listing 149
text alignment 76
unit specification 47
Terminal command 489, 532-534
Time/Date command
Database 428-429
month name 48
NOW function 246
Reporting 482
Spreadsheet 177, 226-227
Title Font command 327
Titles command 303, 327-328
Transfer menu commands *See* Transfer menu commands
Tutorial Index command 50
Two Y-Axes command 328-329
Underline command 152
Undo command 57, 72, 102, 152
Command *(continued)*
Unfreeze Titles command 227
View command 227, 329-330, 482-483
View Form command 429
View List command 366, 429
Width command 227-228, 429-431, 483
X-Axis command 330-331
X-Series command 331
X-Y command 332
Y-Axis command 333
Command topic 64, 279, 359, 495
Communication command 489, 503-504
Communication dialog box
Baud Rate setting 497
Data Bits setting 507
Handshaking option 511
Parity setting 515
Port setting 518
Stop Bits command 532
Communications
cable
See also Appendix C
installing 487
capturing text 501-503
communication port 38
connecting
See also Appendix C
description 490-491
with cable 506
with modem 505-506
creating files 528-529
description xvii-xviii, 485
dialing 508-509
disconnecting 509
ending session 492
error messages *See Appendix C*
file
creating 488-490, 528-529
description 504
downloading 491-492, 510
opening 488-490, 528-529
receiving 520-521
sending 525-526
uploading 491-492, 535
filename extension (.WCM) 19, 28, 504, 529
handshaking 511
modem
See also Appendix C
description 515
installing 486
Communications *(continued)*
modem *(continued)*
setup 514-515
pausing 502-503, 516
printing 518
protocol
See also XMODEM protocol
description 519
Receive protocol 519-521
Send protocol 524
quitting 492
receiving information 491-492
sending information 491-492
settings
adjustment 495, 529-530
saving 531
setup 528-529-531
signing on 522-523, 531-532
start up 488
text
capturing 501-503
displaying 491
sending 527-528
typing 491
troubleshooting *See Appendix C*
utilities xviii
window switching 504
Communications port (COM1, COM2) 518
Comparison criteria 353, 408-409
Component selecting 160
Compounding periods
(CTERM) function 233
(TERM) function 253
Computer-to-computer transfer xviii, 529
Condition argument 238
Connect command 495, 505-506
Connect menu commands
Break 498
Connect 505-506
Dial Again 508
Record Sign-On 522
Sign-On 531-532
Connect time indicator 490, 506
Connect To option 38
Connecting, Communications
See also Appendix C
description 490-491
with cable 506
with modem 505-506
Constant, mathematical
(*e*) 235, 242
(π) 247

Constant field formula 383
Constant formula 342
Continuous Feed option 38
CONTROL key
See also specific key combination
symbol (^) 129
CONTROL+' key
copy cell above 201, 397, 466
copy formatted values 186, 376
CONTROL+; key, current date 98, 102, 201, 397
CONTROL+- key, optional hyphen 97, 102
CONTROL+= key, subscript 101
CONTROL+1 key, single space 101, 134
CONTROL+2 key, double space 73, 101
CONTROL+5 key, 1 1/2 space 101
CONTROL+B key, bold 66, 101
CONTROL+C key, center alignment 67, 101
CONTROL+D key, print date 98, 102
CONTROL+DOWN key
down one paragraph 100, 133
one block down 200, 396, 465
CONTROL+E key, no lines before paragraph 101
CONTROL+END key
end of database 397, 466
end of file 100, 200, 396, 465
end of form 397, 466
CONTROL+ENTER key
enter into range 176, 201
manual page break 97, 102, 113
CONTROL+F key, print filename 98, 102
CONTROL+F8 key, select row 199, 201, 395, 477
CONTROL+G key, unhang indent 92, 101
CONTROL+H key, hanging indent 92, 101
CONTROL+HOME key
beginning of database 397, 466
beginning of file 115, 127, 200, 396, 465
beginning of form 397, 466
CONTROL+HOME key, beginning of file 115, 127
CONTROL+HYPHEN key, optional hyphen 97, 102
CONTROL+I key, italic 99, 101
CONTROL+J key, justified alignment 99, 101
CONTROL+L key, left alignment 101, 103
CONTROL+LEFT key
one block left 200, 396, 465
one word left 100
CONTROL+M key, unnest indent 94, 101
CONTROL+N key, nested indent 94, 101
CONTROL+O key, one line before paragraph 101
CONTROL+P key, print page number 97, 102, 115
CONTROL+PAGE DOWN key
end of screen 100
next record 397, 466
one screen right 200, 396, 465
CONTROL+PAGE UP key
beginning of screen 100
one screen left 200, 396, 465
previous record 397, 466
CONTROL+Q key, exit tutorial 35
CONTROL+R key, right alignment 66, 101
CONTROL+RIGHT key
one block right 200, 396, 465
one screen right 200
one word right 100
CONTROL+S key
scroll canceling xx
strikethrough 101
CONTROL+SHIFT+; key, current time 98, 102, 179, 376
CONTROL+SHIFT+- key, non-breaking hyphen 97, 102
CONTROL+SHIFT+= key, superscript 101
CONTROL+SHIFT+F8 key
entire database selecting 420
entire report selecting 477
CONTROL+SHIFT+HYPHEN 97, 102
CONTROL+SHIFT+SPACEBAR key, non-breaking space 97, 102
CONTROL+SPACEBAR key, plain text 101, 120
CONTROL+T key, print time 98, 102
CONTROL+U key, underline 101, 152
CONTROL+UP key
one block up 200, 396, 465
one paragraph up 100
CONTROL+X key, normal paragraph 101, 112
Conversion
formulas to values 176
Conversion *(continued)*
measurement units 47, 110
Copy button 286
Copy command
Charting 172
Database
cell copying 363-364
label copying 365
record copying 364
from Spreadsheet 545-546
from Word Processor 545-546
to Spreadsheet 546
to Word Processor 540
exchanging information between tools 537-548
Reporting
cell copying 446-447
report copying 447
shortcut key (SHIFT+F3) 99, 172, 199, 464
Spreadsheet
cell copying 57
description 70
to Database 544-546
to Spreadsheet 544-546
Word Processor
copying procedure 57
description 70
from Database 540
from Spreadsheet 539-540
to Database 544-546
to Spreadsheet 544-546
Copy option 285, 473
Copy Special command
Spreadsheet
cell copying 175
converting formulas to values 176
description 172
options 172
Word Processor
character format copying 82
description 70
options 70
paragraph format copying 85
Copy Special dialog box 82, 85, 175-176
Copying
Charting
command description 172
description 285
procedure 286
to Word Processor 541-543

Copying *(continued)*
Database
cells 363-364
from Spreadsheet 546
from Word Processor 544-546
labels 365
records 364
to Spreadsheet 546
to Word Processor 94-95, 539-540
information between tools 537-548
Reporting
cells 446-447
multiple copies 447
procedure 446-448
reports 447
Spreadsheet
cells 165-166, 173-176
columns 174
formatting 173
formulas 165
from Database 546
from Word Processor 544-546
rows 174
to Database 546
to Word Processor 539-540
Word Processor
command description 70
formats 85
from Charting 94-95, 541-543
from Database 94-95, 539-540
from Spreadsheet 539-540
procedure 57
text 71-72
to Database 544-546
to Spreadsheet 544-546
COS (cosine) function 232
Cosine (COS) function 232
Cost argument 234, 250, 252
COUNT function 232
COUNT statistic 443, 452
Country option 48
Country settings 43
CR
carriage return 495, 533
Plain option symbol 23
CRC XMODEM 519, 535
Create button 204, 274
Create option 204, 294
Criteria
AND 411
Comparison 353, 408-409
description 352-353, 406-408
entering 355, 413
Criteria *(continued)*
Equality 408-409, 353
OR 411
Reversing 413-414
specifying 352-353, 406-408
CTERM (compounding periods) function 233
Currency symbol 45, 48
Current date 98, 178, 246
Current Date option 98
Current directory 20-21, 27
Current drive 20-21, 27
Current time 98, 178-179, 246
Current Time option 98
Cursor
blank line inserting 361
character inserting 164
description 5
highlight 55
moving 54
text
inserting 56
moving 57
typing 54
tool integration 540-541
with spelling checker 139
Word Processor screen 53
Cursor Alternate option 533
Cursor Alternate setting 507
Custom hanging indent 92-93
Customized letters 63

Dash (−), check box character 13
Data Bits option 503
Data Bits setting 507, 528
Data editing 163-164
Data Format command 274-275, 291-294
Data Format dialog box 275
Data Labels command 274, 294-295, 304
Data menu commands
1st to 6th Y-Series 280
Data Labels 294
Legend 266-268, 306-307
Series 324
Titles 328
X-Series 331
Data point
bar chart 280
description 260-261
labeling 274, 304
Data point *(continued)*
line chart 281
Database
clearing 362, 379-380
copying
from Spreadsheet 546
from Word processor 544-546
to Spreadsheet 546
to Word Processor 539-540, 544-546
creating 342-346, 365-368
deleting records 372, 380-382, 416
description xvii-xviii, 337-338
editing 349-350, 378-379
erasing 379-380
field formula entering 348-349, 376-378
field inserting 393
filename extension (.WDB) 19, 28, 502
font changing 39-40
form letters and forms 63, 74
functions *See* Function
moving 398-399
naming 399-401
number
entering 347, 374-376
formatting 388-390
page breaking
deleting 372, 403
description 394, 402
inserting 394, 403
printing 357, 403-404
protecting cells 404-405
querying 351-355, 405-414
record
inserting 393
switching 414-415
report summary 543-544
saving 23
searching 416-419
selecting 419-420
sorting records 356-357, 422-425
text entering 347, 374
viewing 429
windows 425-426
Databases list box 76, 96, 105, 107
Databases option 96, 122, 123
Date
cell entering 176-178, 368-369, 448
current date 246, 270
field formula entry 386, 369

Date *(continued)*
format 43, 45
order 48
Date command
See Time/Date command
DATE function 233
Date option 428, 482
DateNumber argument 234, 245, 255
Day argument 233
DAY function 234
DDB (double declining balance) function 234-235
Decimal fraction 157
Default
button 14, 34, 146
filename extension 28
font 74
option 149
paragraph alignment 103
paragraph format 112
tab stop 92-93, 146, 149
Define Chart command 265
Define command 179, 295, 448
Define Form command 370
Define Query command 371
Define Report command 371-372
Delay option 524
Delay setting 507
Delete button
chart deleting 296
data label deleting 295
range name deleting 204
Y-series deleting 295, 324
X-series deleting 295
Delete command
cell deleting 372, 380
column deleting 179, 187, 448, 455
field deleting 381
field name deleting 381
record deleting 416
report deleting 449
row deleting 179, 187, 448, 455
text deleting 55-56, 72
DELETE key
character deleting 11, 72, 102, 164, 349, 379
legend deleting 296
selection deleting 102
text deleting 11
title deleting 296
Delete option 204, 285, 294, 472
Delete Page Break command 179-180, 207, 372, 449
Deleting
See also Clearing; Erasing
Charting
charts 296
data labels 295
legends 296
titles 296
X-series 295, 331
Y-axis 329
Y-series 295, 335
Database
cells 372, 380
field names 361
fields 380-381
labels 361, 380
queries 372, 382
records 372, 381
Reporting
columns 448, 455
manual page breaks 449, 471
reports 449
rows 448, 455
Spreadsheet
columns 179, 187
manual page breaks 179-180, 207
ranges 204
rows 179, 187
Word Processor
columns 148
dictionary words 141-142
manual page breaks 113
splits (windows) 143
tab stops 147
text 11, 55-56, 72
Denominator argument 245
Depreciation 234, 250, 252
Depreciation function, straight line (SLN) 250
Descending option 423
Dial Again command 506, 508
DIAL message 506, 508
Dial Type option 517
Dial Type setting 508
Dialing 508
Dialog box
See also specific dialog box
canceling 85
command execution 10
description 9
messages 15
Dictionary 63, 69-70, 139-142
Direct-connect cable *See* Cable
DIRECTION key
See also TAB and DIRECTION key method
cell activating 340
cell selecting 161-163, 476
description xxiv
highlight moving 156, 161
option selecting 13
range inserting 164
scrolling 54
DIRECTION key method *See* TAB and DIRECTION key method
Directory
changing 20, 27
Microsoft Works 37
opening files from 27-28
saving to 21
Disconnecting Communications 509
Disk drive *See* Drive
DISKCOPY command (DOS) xxii
Dollar command
cell formatting 165
currency symbol 48
description 180, 373
example 158
number formatting 190, 389, 460
Dollar format *See* Dollar command
Dollar sign ($) 159, 182, 215
DOS
command line 29
dialog box 30
entering from Microsoft Works 29-30
prompt xx-xxii, 2-3, 29-30
DOS command 29-30, 50
DOS DIR command xx
Dots (...), blank line indicator 11
Dotted line (...), manual page break designator 112
Double-angle bracket, placeholder designator 75
Double arrow, automatic page break designator 112
Double declining balance (DDB) function 234-235
Double quotation marks (" "), text designator 158, 287, 303, 367
Double Space command 73, 134, 136
DOWN key
command selecting 7
down one cell 200, 396, 465
down one line 100, 397, 466
moving splits 142-143, 224
option selecting 12

DOWN key *(continued)*
next cell 397, 466
scrolling 54
Downloading files 491, 510, 519, 520
Draft Quality option 44, 121
Drive 20-21, 27

e, mathematical constant 235, 242
Echoplex operation 513
Edit menu commands
Database
Clear 362
Delete 361, 372, 380-382, 415-416
Exit Design 382
Exit Query 382
Fill Down 387
Fill Right 387
Insert 393
Move 398
Name 399-400
Reporting
Clear 445
Copy 446-447
Delete 448
Field Name 442, 451, 456
Field Summary 443, 452, 457
Field Value 442, 451, 457-458
Insert 462-463
Move 467-468
Spreadsheet
Clear 171
Copy 166, 172
Copy Special 172
Delete 179
Fill Down 188
Fill Right 188
Insert 198
Move 202
Name 203-205
Word Processor
Copy 70
Copy Special 70
Delete 72
Insert Chart 94-95
Insert Field 96
Insert Special 89, 97-98
Move 111
Undo 102, 152
EDIT message 164, 225
Edit mode 164
Editing
cell contents 180-181, 349-350, 378-379
Editing *(continued)*
data 163-164
from printed copy 114
keys 164, 349, 378-379
reports 450
text
Spreadsheet 156, 163-164
Word Processor 55-57, 73
Editing keys 164, 349, 378-379
Editing text box 11
Elapsed connect time indicator 490, 506
Electronic bulletin board
See Bulletin board
Electronic mail xviii, 493-494, 527
Element, charting 258
Ellipsis (...), additional information needed symbol 8
Emulation, terminal
See also Appendix C
ANSI emulation 507, 534
description 494, 534
VT52 emulation 534
End Capture Text command 502
END key
end of cell contents 164, 349
end of line 100, 397
end of record 396
end of row 200
option selecting 12
removing splits 143, 122
End-of-Line Mark option 97
End-of-Line option 524
ENTER key
captured text file opening 547
cell activating 156
cell entering 350
down one cell in range 200, 396, 465
editing 181
executing command 7, 71
new paragraph entering 54, 102, 118
paragraph ending 151
saving 20
tool integration 540-541, 545
Entering
See also Inserting
Database
cells 350
criteria 355, 413
date 368-369
field formulas 348, 376-378, 385
Entering *(continued)*
Database *(continued)*
field names 349
numbers 347, 374-376
text 342, 347, 374
time 368-370, 386
DOS from Microsoft Works 29-30
Reporting
date 448
field names 443, 454
field values 443, 454
formulas 450-453
numbers 341
statistics 443
summary statistics 454
time 448
Spreadsheet
cells 162
date 176-178
formulas 162-163, 183-186
integers 157
numbers 156-157, 161, 182-183
range references 163
references 184
text 161, 181-182
time 176-179
Word Processor
new paragraphs 54, 102, 118
text 56, 98
Entry format 185
Equal sign (=)
field formula erasing 350
formula designator 157, 183, 348, 453
Equality criteria 353, 408-409
Equation field formula 383-384
ERASE command (DOS) 25
Erasing
See also Clearing; Deleting
Database 379-380
Reporting 454
Spreadsheet 186-187
ERR (error) function 235
Error
Communications messages
See Appendix C
detection protocol
See XMODEM protocol
Error-check encoding/decoding
See Parity
function (ERR) 235
printing 45

ESCAPE key
canceling changes 181
collapsing selection 396, 465, 477
command canceling 7, 10, 14, 71, 111
dialog box canceling 81, 85
EXTEND quitting 100, 200
file transfer canceling 521
menu closing 7
printing canceling 45, 78, 107
Report exiting 444
sign-on canceling 531-532
spelling checker canceling 140
tutorial index canceling 36
Exchanging information
between tools 537-548
with other PC users 494
.EXE file extension 497
Existing Charts list box 296
Existing Names list box 184
Exit Chart command 296-297
Exit command 8, 30, 50
Exit Design command 382
Exit Form Design command 371
Exit Query command 355, 382, 413, 448
Exit Report 455
Exit Report command 371, 455
Exiting
Charting 199, 278
Form Design screen 346, 371
Microsoft Works 30
Reporting 395, 444, 455
tutorial 35
EXP (exponentiation) function 235
Exploded check box 293, 299
Exploding pie slices 299
Exponential
format *See* Exponential command
notation 187, 191-192, 389, 456
number 157, 341
Exponential command
cell formatting 165
description 187, 383, 456
number formatting 191, 389, 460
Exponentiation (EXP) function 235
EXTEND message 225, 477
EXTEND mode 100, 132-133
Extended character set, IBM 151
Extension, filename
See Filename extension
External modem 515
F1 key, Help topic 99, 199, 395, 464
F2 key
edit 162, 181, 199, 350, 395, 464
mode switching 164, 181
F3 key, move 99, 111, 199, 395
F4 key, reference 184, 199
F5 key, Go To command 100, 196, 395, 464
F6 key, next window 100, 199, 395, 464
F7 key, repeat search 100, 199, 395, 464
F8 key
file selecting 81
range selecting 201
selection extending 100, 132-133, 161, 199, 395, 464, 477
text selecting 55, 131-133
F9 key
calculate 168, 199
Paginate Now command 100, 116
switch between Form and List screens 395, 464
F10 key
exit Charting 199
exit Form Design screen 346, 371
exit Reporting 395, 464
FALSE function
definition 236
Logical command 191, 202, 390, 398
Field
creating 365-346
deleting 380
description 338
inserting 393
key 424
moving 398
naming 344, 366, 400-401
selecting 420
width changing 429-431
Field command 383
Field formula
clearing 377
Database entering 348-349, 376-378
description 341-342, 383
entering 376-377, 385
evaluating 384-385
with functions 385-386
Field Labels check box 404
Field name
changing 360
deleting 361
Field name *(continued)*
description 345
field formula inserting 391
point mode inserting 348-349
report entering 443, 454
Field Name command 442-443, 451, 454, 456
Field Name text box 96
Field Summary command 442-443, 452-454, 457
Field value 443, 454
Field Value command 442-443, 451-452, 457-458
Fields list box
Field Name command 456
field name inserting 378, 391, 454
Field Summary command 457
Field Value command 458
form letter file creating 76
mailing label creating 105
re-displaying hidden fields 430
statistic entering 443
Fields option 96
File
active 31
backup 2425, 48-49
closing 25
creating 17, 54, 488-490, 528-529
downloading 491-492, 510
form letter 76-77
formatting 38-43, 84
inserting chart 94-95, 541-543
length 103
listing 28-29
moving within 54, 112, 538
naming 18-20
opening 26, 29, 488-490, 528-529
printing 37-38, 43-45
receiving 520-521
saving 17-24
scrolling 112
selecting 26
switching between files 31
template 150
uploading 491-492, 524, 534
File menu commands
Close 25, 50
DOS 50
Exit 30, 50
New 50
Open 24, 26, 28-29, 50
Save 23, 50
Save All 50
Save As 20-21, 126

File Name text box
captured text file opening 547
chart printing 277, 316
file
opening 20, 25-28
printing 44
form letter file creating 76
report summary opening 544
saving report 475-476
Filename
characters 19
commands, numbered 50
extension
.COM 497
.EXE 497
.GPD 543
.PRD 543
.WCM 19, 28, 504, 529
.WDB 19, 28, 502
.WKS 19, 28, 502
.WPS 19, 28, 502
saving files 21
FILENAME.EXT message 225
Files in list box 25-28
Fill Down command
cell copying 166
description 188, 387
multiple cell copies 364
row copying 174, 188
Fill Right command
cell copying 165
column copying 174, 188
description 188, 387
multiple cell copies 363
First line indent marker 91
First Line option 117
Fixed command
cell formatting 165
description 188, 387, 458
number formatting 190, 389, 460
Fixed format *See* Fixed command
Fixed interest rate (RATE)
function 248-249
Fixed-pitch font 189
Flush left paragraph 59
Flush right paragraph 59
Font
See also Appendix B
changing 39-40
chart title 327
description 73-74, 297
header and footer 42
list box 40, 80, 168, 312, 327, 388, 459
Font *(continued)*
names 39
printer font 325
printer description file 37
selecting 189, 458-459
size 39, 57, 74, 189
style 39
Font command 188-189, 387-389, 458-459
Fonts list box 80, 312, 327, 459
Fonts option 68, 388
Footer
alignment 42-43, 86, 89
centering 86, 89
creating 87-90
formatting 42-43
hiding 90
multiple line 89-90
page layout 61
Footer Margin option 42, 105
Footer text box 41, 90, 115
Footers command 86-87, 89
Form 63, 74-78, 360-362
Form Design screen
blank line
deleting 362
inserting 361
cell moving 399
changing forms 360-362
Clear command 362
Comma command 362
Database creating 345, 367-368
Delete command 372
description 339
displaying 370
Dollar command 373
Exit Design command 382
exiting 346, 371
Exponential command 383
field
creating 346
naming 360, 401
selecting 420
width changing 430-431
Fixed command 387
General command 390
label
creating 346
moving 399
selecting 420
Move command 398-399
record inserting 393
Show Field Name command 421-422
Form Design screen *(continued)*
Width command 429-430
Form letter
file creating 76
from Database file 63, 74
printing 77
procedure 74-78
saving 76
Form screen
See also Form Design screen
Clear command 362
Comma command 362
Define Form command 370-371
Define Query command 371, 412
Define Report command 371
Delete command 372
Dollar command 373
Exponential command 383
Fixed command 387
General command 390
Go To command 390-391
Hide Record command 392
Insert command 393
Layout command 398
Logical command 398
Move command 398-399
Print command 403-404
Search command 416, 418
searching screen 418
Select Text Printer command 419
selecting screen 419-420
Show All Records command 421
Sort command 422
Style command 427-428
Switch Hidden Records command 428
Time/Date command 428-429
View List command 429
Format All button 298-299
Format All option 292, 293
Format Binary option 520, 524
Format button 298-299
Format commands
Comma command
cell formatting 165
description 171, 362, 446
number formatting 190, 389, 460
Dollar command
cell formatting 165
currency symbol 48
description 180, 373
example 158
number formatting 190, 389, 460

Format commands *(continued)*
Exponential command
cell formatting 165
description 187, 383, 456
number formatting 191, 389, 460
Fixed command
cell formatting 165
description 188, 387, 458
number formatting 190, 389, 460
General command
cell formatting 165
description 196, 390
number formatting 190-191, 374, 388, 460-461
Logical command
cell formatting 165
description 202, 398, 467
number formatting 191, 390, 461
Percent command
cell formatting 165
description 208, 403, 471
number formatting 190, 389, 460
Format Data command 308
Format For B&W command 297
Format menu commands
Charting
100% Bar 279-280
Area Line 281-282
Bar 283-284
Data Format 274-275, 291-294
Hi-Lo-Close 301-302
Line 307-308
Pie 314-315
Stacked Bar 326
X-Y 332
Database
Comma 362
Dollar 373
Exponential 383
Fixed 387
General 390
Logical 398
Percent 403
Show Field Name 421-422
Style 427-428
Time/Date 428-429
Width 429-431
Reporting
Comma 446
Dollar 447
Format menu commands *(continued)*
Reporting *(continued)*
Exponential 456
Fixed 458
General 461
Logical 467
Percent 471
Style 481
Time/Date 482
Width 483
Spreadsheet
Comma 165, 171
Dollar 165, 180
Exponential 165, 187
Fixed 165, 188
General 165, 196
Logical 165, 202
Percent 165, 208
Style 225-226
Time/Date 226-227
Width 227-228
Word Processor
Bold 66
Center 67
Character 67-68
Double Space 73
Italic 99
Justified 99
Left 103
Normal Paragraph 112
Paragraph 116
Plain Text 120
Single Space 134-136
Tabs 149
Underline 152
Format, numeric
See Format commands
Format option 292, 293
Format Plain option 527
Format Text option 520, 524, 527
Formatting
cells 164-165, 191, 390, 461
characters 57-58, 67-68, 79-81
charts 298-299
diskettes 29
entire file 84
files 38-40, 82, 84
footers 42-43
headers 42-43
line charts 275, 291
new file 82
normal formatting 82, 90, 93, 119
numbers
Database 388-390
Formatting *(continued)*
numbers *(continued)*
Reporting 459-461
Spreadsheet 164-165, 189-191
paragraphs
changing formats 59-60, 83-84
checking 85
copying formats 85
description 82
Pie chart 275, 292-294
text 57-58
X-Y charts 275, 291
Y-series 275
Formatting bar 291
Formula
cell entering 162
converting to values 176
copying 165
Database entering 348-349
description 154, 157, 191-193, 461
designator, equal sign (=) 157, 183, 348, 453
entering 183-186, 453
with Reporting 450-454
Formula bar
active 169
active cell display 220, 340
description 5, 156, 340
editing 163-164
formula entering 453
number entering 156, 161
text entering 161, 342
Fraction 341
Fraction, decimal 157, 341
Freeze Titles command 194-195
Freezing 195
Full duplex communications mode 513
Full Screen option 533
Full Screen setting 510
Function
ABS (absolute value) 229
Absolute value (ABS) 229
ACOS (arccosine) 230
Arccosine (ACOS) 230
Arcsine (ASIN) 230
Arctangent (ATAN) 230
Arctangent, x/y coordinates (ATAN2) 230-231
ATAN (arctangent) 230
ATAN2 (arctangent, x/y coordinates) 230-231
Average of values (AVG) 231

Function *(continued)*
AVG (average of values) 231
Base 10 logarithm (LOG) 243
CHOOSE 231
COLS (columns) 232
COS (cosine) 232
Cosine (COS) 232
COUNT 232
CTERM (compounding periods) 233
DATE 233
DAY 234
DDB (double declining balance) 234-235
Depreciation, straight line (SLN) 250
description, function 193, 196, 229, 342, 386
Double declining balance (DDB) 234-235
ERR (error) 235
EXP (exponentiation) 235
Exponentiation (EXP) 235
FALSE
definition 236
Logical command 191, 202, 390, 398
Fixed interest rate (RATE) 248-249
function syntax separator (,) 229
Future value (FV) 236-237
FV (future value) 236
HLOOKUP (horizontal lookup) 237
Horizontal lookup (HLOOKUP) 237
HOUR 238
IF 238
INDEX 239
Information not available (NA) 245
INT (integer) 240
Integer (INT) 240
Interest rate, fixed (RATE) 248-249
Internal rate of return (IRR) 240
IRR (internal rate of return) 240
ISERR 240-241
ISNA 241-242
LN (natural logarithm) 242
LOG (base 10 logarithm) 243
Logarithm, base 10 (LOG) 243
Logarithm, natural (LN) 242
MAX (maximum number) 243

Function *(continued)*
Maximum number (MAX) 243
MIN (minimum number) 244
Minimum number (MIN) 244
MINUTE 238, 244
MOD (remainder) 245
MONTH 234, 245
NA (information not available) 245
Natural logarithm (LN) 242
Net present value (NPV) 246-247
Not available (NA) 245
NOW 246
NPV (net present value) 246-247
parentheses (()), function symbol 229
Payment (PMT) 247
PI (π) 247
PMT (payment) 247
Present value (PV) 248
PV (present value) 248
RAND (random number) 248
Random number (RAND) 248
RATE (fixed interest rate) 248-249
Remainder (MOD) 245
ROUND 249
ROWS 249
SECOND 238, 250
SIN (sine) 250
Sine (SIN) 250
SLN (straight line depreciation) 250
SQRT (square root) 251
Square root (SQRT) 251
Standard deviation (STD) 251
STD (standard deviation) 251
Straight line depreciation (SLN) 250
SUM (total) 251-252
Sum-of-the-years-digits (SYD) 252
SYD (sum-of-the-years-digits) 252
TAN (tangent) 253
Tangent (TAN) 253
TERM (compounding periods) 253
TIME 254
Total (SUM) 251-252
TRUE
definition 254
Logical command 191, 202, 390, 398
VAR (variance) 254-255

Function *(continued)*
Variance (VAR) 254-255
Vertical lookup (VLOOKUP) 237, 255
VLOOKUP (vertical lookup) 237, 255
YEAR 234, 255
Future value (FV) function 236-237
FutureValue argument 233, 248, 253
FV (future value) function 236

General command
cell formatting 165
description 196, 390, 461
number formatting 190, 374, 388, 460
General format *See* General command
Global replacement 128
Go To button 324
Go To command
description 86, 196, 390
editing from printed copy 114
field name inserting 378, 391
go to cell 197
go to field 378, 391
go to record 391
range inserting 184, 197
reference entering 184
Go To option 294
.GPD file extension 543
Graphics
graphics card xxii
printing 37
Grid line 300, 330, 333
Grid Lines check box 300, 330, 333
Guess argument 240

Half duplex communications mode 513
Handshake option 504
Handshaking 502, 504-505, 511-512, 516
Hanging indent 90, 92-93
Hanging paragraph 117
Hardware handshaking 512
Hayes command set 486, 515
Hayes-compatible modem 512, 515, 517
Header
alignment 86, 89
centering 86, 89

Header *(continued)*
creating 87-90
formatting 42-43
hiding 90
multiple line 89-90
page layout 61
Header Margin option 42, 105
Header option 41
Header text box 90, 115
Headers & Footers command
formatting 42
page
layout 61
numbering 115
procedure 86-90
Help
button 34
canceling 34
description 31, 33
diskette 32
index 32-34
selecting 33
shortcut key (F1) 32-33, 99, 199, 395
topic 32-34
Help index 32-34
Help Index command 32, 50
Help topic dialog box 34
Hercules graphics card 46
Hide record command 392
Hiding
columns 197
description 392
field name 422
fields 392-393
formula 222
grid lines 300
legends 268, 325
records 392, 442
ruler 125
Highlight
cell activating 156, 220, 340
cursor 55
description 5
moving 161
Hi-Lo scaling 321
Hi-lo-close chart 263, 301
Hi-Lo-Close command 301
HLOOKUP (horizontal lookup) function 237
HOME key
beginning of cell contents 164, 180, 349, 378
beginning of line 100, 397, 466
HOME key *(continued)*
beginning of record 396, 465
beginning of row 200
option selecting 12
removing splits 143, 224
Horizontal alignment 76
Horizontal lookup (HLOOKUP) function 237
Horizontal text box 107, 122
Host computer 491, 502, 507, 512
Hour argument 254
HOUR function 238

IBM extended character set 151
Identifying name 531
IF function 238
Ignore button 140
Ignore option 69
Impact printer 44
Inch, standard measurement unit 42, 47, 110
Incoming calls 495-496
Indenting
brackets ([]), indent designator 91
description 108
first line 92
hanging 90, 92-93
left 90
nested 90, 94
paragraphs 59, 65, 90-94
removing 92
right 65, 90
Index *See* Help index; Tutorial index
Index button 34
INDEX function 239
Information
copying between tools 537-548
exchanging
between tools 537-548
with other PC users 494
receiving 491-492
sending 491-492
Information not available (NA) function 245
Information service
calling 500-501
downloading 491
getting started 493
settings 529-531
signing on 522
text sending 527
uploading 491

Insert Chart command 94-95, 541
Insert command
blank line inserting 361
column inserting 198
description 462
field inserting 393
record inserting 393
row inserting 198, 463
Insert Field command 74-76, 96, 104, 152
Insert Field dialog box 76
Insert Page Break command
Database 394, 402-403
Reporting 463, 469-470
Spreadsheet 198, 206-207
Insert Special command 89, 97
Insert Special dialog box 98
Inserting
Database
blank lines 361
commas (,) 362
field formulas 391
field names 348, 378
fields 393
page breaks 394, 403
point mode 348-349
records 393
reference 348, 377
report summaries 543-544
Reporting
columns 462-463
page breaks 470
rows 462-463, 474-475
Spreadsheet
characters 164
columns 198
page breaks 198, 207
point mode 183-184
ranges 164, 184, 197
reference 162-163, 183
rows 198
Word Processor
from Charting 94-95, 541-543
special characters 97-98
text 56, 98
Installing
cable
See also Appendix C
description 487
modem
See also Appendix C
description 486
mouse *See Appendix D*
printer *See Appendix B*

INT (integer) function 240
Integer (INT) function 240
Integer entering 157, 341
Integrating
  tools 537-548
  Word Processor information 538-546
Interest rate function, fixed (RATE) 248-249
Interface *See Appendix B*
Internal modem 515
Internal rate of return (IRR) function 240
International characters 151
Interval 318-319, 331, 333
Interval option 331, 333
Int'l A Country option 48
Int'l B Country option 48
Intr (Introduction) row 434-435, 440-441, 451, 473
IRR (internal rate of return) function 240
ISERR function 240-241
ISNA function 241-242
Italic check box 80
Italic command 99
Italic option 68, 226, 428, 481
Italic text 39, 57, 68, 101

Joining paragraphs 120
Justified alignment 59, 66
Justified command 99

Keep Paragraph Together check box 83, 113, 117
Keep With Next Paragraph check box 83, 114, 117
Key
  ALT
    See also specific key combination
    button selecting 14
    color selecting 46
    extended characters 151
    menu bar activation 6
    Microsoft Works startup 2-3
    option selecting 10, 13
    tutorial selecting 35
  ALT+174, left double-angle bracket 75
  ALT+175, right double-angle bracket 75
Key *(continued)*
  ALT+BACKSPACE, undo 102
  ALT+O, open Options menu 511
  BACKSPACE
    character deleting 11, 72, 108, 164, 349, 379
    clearing cells 186, 379-380
    defined 102
    error deleting 151
    paragraph joining 120
    text deleting 55, 72, 161
    text typing 54
  CONTROL
    See also specific key combination
    symbol (^) 129
  CONTROL+'
    copy cell above 201, 397, 466
    copy formatted values 186, 376
  CONTROL+;, current date 102, 201, 397, 466
  CONTROL+-, optional hyphen 97, 102
  CONTROL+=, subscript 101
  CONTROL+1, single space 101, 134
  CONTROL+2, double space 73, 101
  CONTROL+5, 1 1/2 space 101
  CONTROL+B, bold 66, 101
  CONTROL+C, center alignment 67, 101
  CONTROL+D, print date 98, 102
  CONTROL+DOWN
    one block down 200, 396, 465
    one paragraph down 100, 133
  CONTROL+E, no lines before paragraph 101
  CONTROL+END
    end of database 397, 466
    end of file 100, 200, 396, 465
    end of form 397, 466
  CONTROL+ENTER
    enter into range 176, 201
    manual page break 97, 102, 113
  CONTROL+F, print filename 98, 102
  CONTROL+F8, select row 199, 201, 395, 464
  CONTROL+G, unhang indent 92, 101
  CONTROL+H, hanging indent 92, 101
Key *(continued)*
  CONTROL+HOME
    beginning of database 397, 466
    beginning of file 115, 127, 200, 396, 465
    beginning of form 397, 466
  CONTROL+HYPHEN, optional hyphen 97, 102
  CONTROL+I, italic 99, 101
  CONTROL+J, justified alignment 99, 101
  CONTROL+L, left alignment 101, 103
  CONTROL+LEFT
    one block left 200, 396, 465
    one word left 100
  CONTROL+M, unnest indent 94, 101
  CONTROL+N, nested indent 94, 101
  CONTROL+O, one line before paragraph 101
  CONTROL+P, print page number 97, 102, 115
  CONTROL+PAGE DOWN
    end of screen 100
    next record 397, 466
    one screen right 200, 396, 465
  CONTROL+PAGE UP
    beginning of screen 100, 465
    one screen left 200, 396, 466
    previous record 397
  CONTROL+Q, exiting tutorial 35
  CONTROL+R, right alignment 66, 101
  CONTROL+RIGHT
    one block right 200, 396, 465
    one screen right 200
    one word right 100
  CONTROL+S
    scroll canceling xx
    strikethrough 101
  CONTROL+SHIFT+;, current time 98, 102, 179, 370
  CONTROL+SHIFT+-, non-breaking hyphen 97, 102
  CONTROL+SHIFT+=, superscript 101
  CONTROL+SHIFT+F8
    entire database selecting 420
    entire report selecting 477
  CONTROL+SHIFT+HYPHEN 97, 102
  CONTROL+SHIFT+SPACEBAR, non-breaking space 97, 102

Key *(continued)*
CONTROL+SPACEBAR, plain text 101, 120
CONTROL+T, print time 98, 102
CONTROL+U, underline 101, 152
CONTROL+UP
one block up 200, 396, 465
one paragraph up 100
CONTROL+X, normal paragraph 101, 112
DELETE
character deleting 11, 72, 102, 164, 349, 379
legend deleting 296
selection deleting 102
text deleting 11
title deleting 296
DIRECTION
See also TAB and DIRECTION key method
cell activating 340
cell selecting 161-163, 476
description xxiv
highlight moving 156, 161
option selecting 13
range inserting 164
scrolling 54
DOWN
command selecting 7
down one cell 200, 396, 465
down one line 100, 397, 466
moving splits 142-143, 223-224, 426
option selecting 12
next cell 397, 466
scrolling 54
END
end of cell contents 164, 180, 349, 378
end of line 100, 397, 466
end of record 396, 465
end of row 200
option selecting 12
removing splits 143, 224
ENTER
captured text file opening 547
cell activating 156
cell entering 350
down one cell in range 200, 396, 465
editing 181
executing command 17, 71
new paragraph entering 54, 102, 118, 151

Key *(continued)*
ENTER *(continued)*
paragraph ending 151
saving 20
tool integration 540-541, 545
ESCAPE
canceling changes 181
collapsing selection 396, 465, 477
command canceling 7, 10, 14, 71, 111
dialog box canceling 81, 85
EXTEND quitting 100, 200
file transfer canceling 521
menu closing 7
printing canceling 45, 78, 107
Report exiting 444
sign-on canceling 531-532
spelling checker canceling 140
tutorial index canceling 36
F1, Help topic 99, 199, 395, 464
F2
edit 162, 181, 199, 350, 395, 464
mode switching 164, 181
F3, move 99, 199, 395, 464
F4, reference 184, 199
F5, Go To command 100, 196, 395, 464
F6, next window 100, 199, 395, 464
F7, repeat search 100, 199, 395, 464
F8
file selecting 81
range selecting 201
selection extending 100, 132-133, 161, 199, 395, 464, 477
text selecting 55, 131-133
F9
calculate 168, 199
Paginate Now command 100, 116
switch between Form and List screens 395, 464
F10
exit Charting 199
exit Form Design screen 346, 391
exit Reporting 395, 464
HOME
beginning of cell contents 164, 180, 349, 378

Key *(continued)*
HOME *(continued)*
beginning of line 100, 397, 466
beginning of record 396, 465
beginning of row 200
option selecting 12
removing splits 143, 224
LEFT
cursor moving 12, 164
left one cell 200, 396-397, 464
left one character 100, 164, 180, 349, 378
menu selecting 7-8
moving splits 224, 426
previous cell 397, 466
scrolling 54
movement keys
scrolling 54
selection canceling 100
split (window) moving 143
text selecting 55
NUMLOCK 513, 533
PAGE DOWN
highlight moving 34
next screen selecting 34, 347, 397
one screen down 100, 200, 396, 465
option selecting 12
scrolling 35, 54, 100
PAGE UP
highlight moving 34
one screen up 100, 200, 396, 465
option selecting 12
previous screen selecting 34, 346, 397
scrolling 54, 100
RIGHT
cursor moving 12, 164
menu selecting 7-8
moving splits 223-224, 426
next cell 397, 466
right one cell 200, 396, 465-466
right one character 100, 180, 349, 378-379
scrolling 54
SHIFT
See also specific key combination
selecting text 12, 55, 131-132

Key *(continued)*
SHIFT + 6, print caret (^) 129
SHIFT + CONTROL + ;, enter current time 201, 397, 466
SHIFT + CONTROL + F8
select Database 395, 464
select Spreadsheet 199, 201
SHIFT + DIRECTION
cell selecting 477
character selecting 349, 379
SHIFT + ENTER
end-of-line mark 97, 102, 151
new header/footer line 89
up one cell in range 200, 396, 465
SHIFT + F1, tutorial 35-36, 99, 199, 395
SHIFT + F3, copy 99, 172, 199, 464
SHIFT + F6, previous window 100, 199, 224, 395
SHIFT + F7
repeat Copy command 72, 100, 175, 199, 365, 395, 447, 464
repeat Format command 100, 199, 395, 364
SHIFT + F8
select column 171, 199, 201, 395, 464, 477
shrink selection 100, 132
SHIFT + F10
view Chart 199
View command 329
view Report 395, 464
SHIFT + movement, range 201
SHIFT + TAB, left one cell in range 200, 210, 396, 465
Shortcut key listing
Database 394-397
Reporting 463-466
Spreadsheet 199-201
Word Processor 99-102
SPACEBAR, option selecting 13
TAB
See also TAB and DIRECTION key method
button selecting 14
description 102, 144
hanging indents 92-93
next text box 277
next unlocked cell 200
option selecting 10
right one cell in range 200, 396, 465

Key *(continued)*
UP
command selecting 7
moving splits 143, 224, 426
option selecting 12
previous cell 397, 466
scrolling 54
up one cell 200, 396-397, 465
up one line 100, 397
Key field 424
Keyboard *See* Shortcut key listing
Keypad Alternate option 533
Keypad Alternate setting 513

Label
changing 360
copying 365
creating 345-346, 367-368
deleting 380
mailing 63, 103-108
moving 399
printing 399
selecting 420
Label Frequency text box 287, 330
Labeling
charts 273, 302-303
Charting categories 265-266
data points 274, 304
X-axis categories 287
Landscape option 95, 276, 541, 543
Layout *See* Page layout
Layout command
chart layout 276
chart positioning 305, 313-314
description 201, 398
footer 87, 90
header 87, 90
margins 61, 108
page
breaking 206
layout 40-41, 48, 50
numbering 115
pre-printed forms 76
report layout 467
Layout command dialog box 50, 87, 103-104, 121-122
Layout dialog box 42, 47, 105
Leader character 146-147
Leader option 149
Left alignment 66 103
Left command 103
Left indent 65, 90

Left Indent text box 83, 92-93, 117, 543
LEFT key
cursor moving 12, 164
left one cell 200, 396-397, 464
left one character 100, 180, 349, 378
menu selecting 7-8
moving splits 224, 426
previous cell 397, 466
scrolling 54
Left Margin option 305
Left Margin text box 105, 276
Legend
creating 266-267
command description 306, 325
deleting 296
displaying 325
hiding 268, 325
Legend command 266-267, 306-307
Legend dialog box 267
Legend text box 267, 287
Length, chart 277
Lesson *See* Tutorial
Lesson button 34
Letter, form
file creating 76
from Database file 63
printing 77
procedure 74-78
LF (line feed) 495, 533
Life argument 234, 250, 252
Line
dotted (...), manual page break designator 112
first line marker (:) 91
orphan 112
spacing *See* Spacing
widow 112
Line, Bar option 309
Line chart
chronological ordering 263
description 260, 263
formatting 291-292
Line command 307-308
Y-series formatting 275
Line command 307-308
Line feed (LF) 495, 533
Line Spacing option 117
Line Spacing text box 83, 136
List box
See also specific list box
description 9
option reference 10

List box *(continued)*
scrolling 12
List button 205
List option 204
List Printer Formats command 308
List screen
Clear command 362
Comma command 362
copying 364
Database creating 344, 366-367
Define Query command 371, 412
Define Report command 371
Delete command 372
Delete Page Break command 372
description 339
Dollar command 373
Exponential command 383
Field
command 383
inserting 393
naming 344-345, 366-367, 401
Fill Down command 387
Fill Right command 387
Fixed command 387
Font command 387-388
General command 390
Go To command 390-391
Hide Record command 392
Insert command 393
Insert Page Break command 394
Layout command 398
Logical command 398
Move command 398-399
moving 398
Name command 399-400
Print command 403-404
Record command 416
record inserting 393
Search command 416-418
searching 417
Select Text Printer command 419
selecting 419-420
Show All Records command 421
Sort command 422
Split command 425-426
Style command 427-428
Switch Hidden Records command 428
Time/Date command 428-429
View Form command 429
Width command 429-430
Listing files 28-29
LN (natural logarithm) function 242
Local Echo option 533
Local Echo setting 500, 513-514
Locked option 226, 428
Locking cells 201, 210, 404
LOG (base 10 logarithm) function 243
Logarithm function, base 10 (LOG) 243
Logarithm function, natural (LN) 242
Logarithmic check box 322, 331, 333
Logarithmic scaling 321-322
Logical command
cell formatting 165
description 202, 398, 467
number formatting 191, 390, 461
Logical format *See* Logical command
Logical value 236, 240-241
Long files 103
LookupValue argument 237
Lotus 1-2-3, with Microsoft Works *See Appendix E*

Mail *See* Electronic mail
Mailing labels 63, 103-108
Main dictionary *See* Dictionary
MAIN.DIC file, main dictionary 139
Mainframe computer 499, 529
Manual calculation 169, 202
Manual Calculation command 202
Manual Feed option 38
Manual Page Break option 97
Manual page breaking *See* Page breaking
Manual pagination 108, 114
Manual Pagination command 108, 114
Margin
See also Appendix B
description 108-109
page layout 61
Margins option 41
Marker 260, 308
Marker option 292, 298
Markers list box 275, 298
Mask option 504, 530
Match Upper/Lower Case text box 124, 127-128
Match Whole Word text box 124, 127-128
Matching settings 499, 528
Mathematical
constants
(*e*) 235, 242
(π) 247
Mathematical *(continued)*
operators 157, 192
MAX (maximum number) function 243
MAX statistic 443, 452
Maximum number (MAX) function 243
Maximum option 331, 333
Maximum value 318-319
Measurement unit
abbreviations 47, 110
centimeters 42, 47, 110
changing settings 45
conversion equivalents 47, 110
inches 47, 110
line 136
pitch 47, 110
point size 47, 110
standard line unit changing 136
Menu
See also specific menu
browsing 7
description 4
menu bar 4, 6
opening 6
Message
A1:B10 225
CALC 169, 225
CAPTURE 501
CIRC 170, 225
Communications error messages *See Appendix C*
DIAL 506, 508
Dialog box 15
EDIT 225
EXTEND 225, 477
FILENAME.EXT 225
message line xxiii, 5, 31, 54
NL CL 225
OFFLINE 490, 506
PAUSE 516
PLAY 531
POINT 162, 164, 225
Printer messages *See Appendix B*
RECEIVE 521
RECORD 523
SEND 528
SPLIT 223
Status line 225
TRANSFER SUCCESSFUL 521
WAITING 521
Message line xxiii, 5, 31
Microsoft Works
captured text incorporating 547-548

Microsoft Works *(continued)*
Charting *See* Charting
clock 177
Communications
See Communications
conventions xxiv
Database *See* Database
directory 37
exiting 30
Help information *See* Help
integrating tools 537-548
learning *See* Tutorial
manual organization xxiii
mouse *See Appendix D*
office tools defined xvii-xix, xxiii
printer diskette 37
Reporting *See* Reporting
Setup program xix, xxii
Spreadsheet *See* Spreadsheet
startup xix-xx, 2-3
switching
between files 31
between tools 63
symbols xxiv
temporarily leaving 29-30
tool integration 537-548
tutorial *See* Tutorial
with other applications
See Appendix E
Word Processor
See Word Processor
MIN (minimum number) function 244
MIN statistic 443, 452
Minicomputer 499, 529
Minimum number (MIN) function 244
Minimum option 330, 333
Minimum value 318-319
Minus (-) sign, negative number designator 185, 375
Minute argument 254
MINUTE function 238, 244
Misspelled Word option 69
Mixed Line & Bar command 309-310
Mixed reference 184-185, 216-217
MOD (remainder) function 245
Mode
answer 499
receive 499
switching 164
Modem
See also Appendix C
connecting 505-506
description 515
installing 486-467
Modem *(continued)*
setup 514-515
Modem Setup command 505
Modem Setup text box 517
Modulator/demodulator *See* Modem
Modulus (remainder) 245
Monitor 46
Monochrome monitor 46
Month argument 233
MONTH function 234, 245
Month name 48
Mouse *See Appendix D*
Move command
cell moving 202, 360, 399
column moving 203, 467-468
description 398, 467
label moving 399
moving within file 538
record moving 399
row moving 203, 467-468
shortcut key (F3) 99, 199, 395, 464
text moving 57, 111
undoing 152
Movement keys
scrolling 54
selection canceling 100
split (window) moving 143
text selecting 55
Moving
Database
cells 360, 399
fields 398
labels 399
records 398
Reporting
columns 467-468
rows 467-468
Spreadsheet
cells 202
columns 203
rows 203
Word Processor
cursor 54
splits (windows) 143
text 57, 111
within file 54, 112, 538
MS-DOS *See* DOS
Multiple copies
form letters 74
pre-printed forms 74
selected cells 175, 363, 365, 447
NA (information not available) function 245
Name, identifying 531
Name command 203-205, 399-401
Name option 204, 285, 400, 472
Name text box
chart naming 285, 311
field naming 344, 366
range naming 204
report naming 468
Names list box 197, 204-205
Names option 197, 204
Naming
charts 284-285, 310-311
fields 344-345, 366, 399-401
files 18-20
ranges 204, 212-213, 217
reports 468
Natural logarithm (LN) function 242
Negative number designation 185, 362, 375
Negative value 164
Nested indent 90, 94
Net present value (NPV) function 246-247
New Button 17
New command
Chart creating 311
Communications file creating 528
description 50, 205
file creating 17
file opening 26
Reporting 469
Speed Charting 290
New dialog box 17, 26, 29, 344-345
New file formatting 82
NL CL message 225
No Footer on 1st Page option 41
No Header on 1st Page option 41
Non-Breaking Hyphen option 97
Non-Breaking Space option 97
Non-echoplex operation 513
Non-Hayes-compatible modem
See Appendix C
Normal format 82, 90, 93
Normal option 68
Normal Paragraph command 84, 112
Normal Paragraph option 93
Normal scaling 320
Not available (NA) function 245
NOT operator 414
NOW function 246
NPV (net present value) function 246-247

Number
  argument expression 229
  entering
    Database 347, 374-376
    formula bar 156, 161
    Spreadsheet 182-183
  exponential 157, 341
  field formula entering 341-342
  formatting 164-165, 189-191, 388-390, 459-461
  identifying 531
  negative designation 185, 362, 375
  selecting 160
  sign (#) 182, 228, 347, 483
Number of Copies text box 44, 277, 316
Number of Decimals text box 165, 191
Number of Labels Across Page text box 107, 122
Numbered commands 50
Numbered paragraphs 92
Numbering pages 41, 44, 61, 114-116
NumberOfPlaces argument 249
Numerator argument 245
Numeric format
  See Format commands
NUMLOCK key 513, 533

Office Tools *See* Tools
OFFLINE message 490, 506
OK button 14, 45, 278
Open As dialog box 544, 547
Open button 26
Open command 26-29, 50, 544
Open dialog box 26-27
Opening file 26-28
Operand 192, 353, 407, 450
Operator
  description 157, 192, 450
  listing
    Database 353, 385, 408, 410
    Spreadsheet 192
Option
  See also specific option
  changing 10-13
  selecting 10, 12-13
Option argument 231
Option box 9-10
Optional Hyphen option 97

Options menu commands
  Charting
    Format For B&W 297
    List Printer Formats 308
    Mixed Line & Bar 309-310
    Right Y-Axis 317-318
    Show Border 325
    Show Legends 325
    Show Printer Fonts 325
    Two Y-Axes 328-329
    X-Axis 330-331
    Y-Axis 333
  Communications
    Communication 503-504
    Phone 516-517
    Terminal 532-534
  Database
    Define Form 370
    Protect 404-405
    Split 425-426
    View Form 429
    View List 429
  Spreadsheet
    Calculate Now 168-169
    Freeze Titles 194-195
    Manual Calculation 202
    Protect 210
    Show Formulas 222
    Split 223
    Unfreeze Titles 227
  Word Processor
    Check Spelling 69-70
    Headers & Footers 86-90
    Manual Pagination 108
    Paginate Now 116
    Show All Characters 133
    Show Ruler 133
    Split 142
OR criteria 411
Orientation option 95, 305, 543
Orphan line 112
Other Drives & Directories list box 20, 24, 27, 475-476
Other Font command 312
Overwriting captured text 502

Page
  breaking *See* Page breaking
  length 41, 48
  numbering 41, 44, 61, 114-116
  size 42, 45
  width 41, 48

Page breaking
  Database
    command description 394
    deleting 372, 403
    description 402
    inserting 394, 403
  Reporting
    automatic 469
    command description 463
    deleting 449, 471
    description 469
    inserting 470
  Spreadsheet
    deleting 179-180, 207
    description 206
    inserting 207
  Word Processor
    automatic 108, 112
    deleting 112, 207
    manual 108, 112-114
    mark 207
    preventing 83, 113-114, 117
    shortcut key (CONTROL+ENTER) 97, 102, 113
PAGE DOWN key
  highlight moving 34
  next screen selecting 34, 347, 397, 466
  one screen down 100, 200, 396, 465
  option selecting 12
  scrolling 35, 54, 100
Page Feed option 38
Page layout
  charts 313-314
  description 40
  footers 61
  header/footer formatting 42-43
  headers 61
  margins 61
  options 41-42
  page breaks 61
  page numbers 61
  reports 467
  saving 42
Page Length text box 41, 105, 277, 305
Page Number option 41, 86
Page number placeholder 86
PAGE UP key
  highlight moving 34
  one screen up 100, 200, 396, 465
  option selecting 12
  previous screen selecting 34, 347, 397, 466

PAGE UP key *(continued)*
scrolling 54, 100
Page Width text box 41, 105, 277, 305
Paginate Now command 114, 116
Pagination 108, 206, 402, 469
Paper size 41
Paragraph
alignment 59, 65-66, 540
bulleted 92
centering 66-67
copying formats 85
description 118-119
formatting
changing formats 59-60, 83-84
checking 85
copying formats 85
default 112
description 82
normal setting 82, 90, 93, 119
paragraph mark 59, 82, 118-119
hanging 90, 92-93
indenting 59, 65, 90-94
joining 120
mark
description 54
paragraph formatting 59, 82, 118-119
tool integration 539, 545
normal format setting 119
numbered 92
selecting 133
splitting 119
Paragraph command
chart size 95
description 116
format changing 83
hanging indents 93
options listing 117-118
page breaking 112-114
sizing chart 542
spacing between paragraphs 134-135
text aligning 77
unit specification 47
Paragraph dialog box
custom hanging indent 93
format selecting 83, 85, 116
mailing labels 106
paragraph aligning 66
text aligning 77
Paragraph Format option 70, 85
Paragraph mark *See* Paragraph
Parallel printer 38
Parentheses (( ))
function symbol 229
negative number designator 185, 362, 375
Parity 515
Parity option 504
Parity setting 515, 528
Password 531
Pathname 21, 28
Pattern 275, 291-293, 298, 314
Patterns list box 275, 291-293, 298
Pause command 504, 516
PAUSE message 516
Pausing Communications 502-503, 516
Payment, periodic 247
Payment argument 236, 248, 253
Payment (PMT) function 247
PC-to-PC setting 529
Percent
entering 341
format *See* Percent command
sign (%) 182
Percent command
cell formatting 165
description 208, 403, 471
number formatting 190, 389, 460
Period argument 234, 252
Periodic payment 247
Personal computer calling 499-500
Personal dictionary *See* Dictionary
PERSONAL.DIC file, personal dictionary 139, 141
Phone command 489, 516-517
Phone dialog box
Automatic Answer setting 496
Dial Type setting 508
Modem Setup setting 514-515
Phone Number setting 517
Phone Number text box 508, 517
Phone setting adjustment 530
PI (π) function 247
Pi (π), mathematical constant 247
Pie chart
creating 315
data point description 260
description 263
formatting 292-294
Y-series formatting 275
Pie command 314-315
Pie slices
See also Slices
exploding 299
Pitch
See also Appendix B
description 47, 110
Placeholder
chart 541-542
chart in Word Processor file 94
Database information in Word Processor file 96
form letter 74-77
mailing label 104-106
page number 86
pre-printed form 74-77
Plain option 23, 126
Plain Text command 81, 120
Plain text file 496
PLAY message 531
Plotter
See also Appendix B
with Chart 278, 317
PMT (payment) function 247
Point
See also Appendix B
description 297
size 47, 110
POINT message 162, 164, 225
Point mode
cell editing 164
field name inserting 348, 378
reference inserting 162-163, 183-184, 348, 377
Pointer *See* Mouse
Population standard deviation 251
Port
See also Appendix B
setting 518
Portrait option 95, 276, 541, 543
Position text box 68, 93, 146-147, 149
Positive value 164
Power interruption 17-18
.PRD file extension 543
Pre-printed form 63, 74-78, 360-362
Present value (PV) function 248
PresentValue argument 233, 248
Prices, stock 157
Principal argument 247
Print All But Record Rows check box 44, 444, 471, 543
Print area 167, 209, 221
Print button 107
Print Chart command 208
Print command
Chart printing 315-317
Database printing 357, 403-404

Print command *(continued)*
description 50, 121
form letter printing 77
Report printing 444, 471
Spreadsheet printing 167, 208-209
Word Processor file with chart printing 543
Print Date option 98
Print dialog box 43-44, 77, 107, 123, 278
Print File option 98
Print Labels command
description 121-122
form letter printing 96
label sizing 104
mailing label printing 106
options listing 122
unit specifying 47
Print Labels dialog box 106, 122
Print menu commands
Charting
Layout 305
Other Font 312
Print 315-317
Select Chart Printer 323
Title Font 327
Database
Delete Page Break 372
Font 387-388
Insert Page Break 394
Layout 398
Print 403-404
Select Text Printer 419
Reporting
Delete Page Break 449
Font 458-459
Insert Page Break 463
Layout 467
Print 471
Select Text Printer 476
Spreadsheet
Delete Page Break 179-180
Font 188
Insert Page Break 198
Layout 201
Print 208-209
Print Chart 208
Select Text Printer 220
Set Print Area 221-222
Word Processor
Layout 50
Print 50, 121
Print Labels 121-122
Print menu commands *(continued)*
Word Processor *(continued)*
Print Merge 123
Select Printer 50
Print Merge command 74, 77, 96, 123
Print Merge dialog box 77
Print option 122
Print Page option 97
Print Record and Field Labels check box 44, 357, 404
Print Report command 471
Print Row and Column Labels check box 44, 209
Print Specific Pages option 44
Print Time option 98
Print to File check box 44, 277, 316
Printer
See also Appendix B
adding 37-38
changing 37-38
description files 37
diskette 37
font 325
impact 44
parallel 38
selecting 37-38
serial 38
Setup program 37
specification 37
TTY 40
Printer messages *See Appendix B*
Printers option 38
Printing
See also Appendix B
canceling 45, 78, 107
captured text 518
Chart
command description 315-316
graphics capabilities 37
plotter printing 278, 317
procedure 277, 316-317
Communications 518
Database 357, 403-404
errors 45
files 37, 43-45
form letters 77
forms 77
labels 121-122
mailing labels 106-107
quality 37
Report 444, 471
Spreadsheet 167, 208-209
Word Processor 61-62, 74
Protect command 201, 210, 404-405
Protocol
description 519
Receive protocol 519-521
Send protocol 524
XMODEM protocol
description 519, 535
downloading files 491, 510
receiving files 521
sending files 525-526
Pulse option 508
PV (present value) function 248

Quantity *See* Number
Quarter 260
Query *See* Querying
Query command 77, 106
Query menu commands
Database
Apply Query 359-360
Define Query 371
Hide Record 392
Show All Records 421
Sort 422-425
Switch Hidden Records 428
Reporting
Define 448
Sort 478-480
Query screen
deleting 372, 380
exiting 371, 382, 448
Querying
applying 355, 413
creating 354-355, 412
defining criteria 352-353, 407
deleting 382
description 351-352, 405, 472
using criteria 353, 408
Question mark (?)
similar spelling finder 129
wildcard character 28, 219, 418
Quotation mark
double (" "), text designator 158, 287, 303, 367
single (' ')
entering date in formula 177, 369
entering time in formula 178, 370, 386
naming ranges 212

RAND (random number) function 248
Random number (RAND) function 248
Range
  charting 259, 265
  deleting 204
  description 155, 211
  list 205
  naming 204, 212-213, 217
  reference *See* Range reference
  searching 219
  selecting 212, 323, 477
Range reference
  description 156, 183, 211, 214
  entering 163
  point mode inserting 183-184
  separator, colon (:) 156
RangeReference argument
  AVG function 231
  COLS function 232
  COUNT function 232
  HLOOKUP function 237
  INDEX function 239
  IRR function 240
  MAX function 243
  MIN function 244
  NPV function 246
  ROWS function 249
  STD function 251
  SUM function 251-252
  VAR function 254-255
  VLOOKUP function 237
Rate argument
  CTERM function 233
  FV function 236
  NPV function 246
  PMT function 247
  RATE function 248
  TERM function 253
RATE (fixed interest rate) function 248-249
README.WPS file xx
RECEIVE message 521
Receive mode 499
Receive Protocol command 491, 510, 519-521, 535
Receiving files 520-522
Record
  copying 364-365
  description 338, 344
  inserting 393
  moving 398-399
  selecting 420
  switching 414-415
Record command 416
RECORD message 523
Record row 434-435, 451-452, 474
Record Sign-On command 522-523, 531
Record text box 391
Recorded sign-on 522, 531
Recovering deleted text 72
Redialing 508-509
Reference
  absolute 159-160, 184-185, 214-215
  changing 204
  description 213-214
  formula entering 162-163
  inserting 183, 377
  mixed 184-185, 216-217
  relative 159-160, 187, 214
Reference text box 197-198
Relative reference 159-160, 187, 214
Remainder (MOD) function 245
Remote Echo 513
Removing
  indents 92
  style 80
Rename button 311
Rename command 468
Rename option 468, 285, 472
Renaming *See* Naming
Replace All button 128
Replace All text box 124
Replace button 128
Replace command 124, 127-128, 152, 548
Replace text box 124, 502
Replace With text box 69-70, 124, 139, 140
Report *See* Reporting
Report definition 434, 448
Report menu commands
  Define Report 371-372
  Exit Report 455
  New 469
  Reports 472-473
  Save As 475-476
  View 482-483
Report screen 427-428
Report summary 543-544
Reporting
  adding rows 440-442
  breaks 438-440
  changing fonts 39-40
  clearing 445, 454-455
  column inserting 462-463
Reporting *(continued)*
  copying 446-448
  creating 437
  deleting 448-449, 455
  description 433-434
  displaying reports 483
  editing 450
  entering 450-454
  erasing 454
  exiting 371, 444, 455
  formulas 450-454
  inserting
    columns 462-463
    page breaks 470
    rows 462-463, 474-475
  moving 467-468
  naming 468
  page breaking
    automatic 469
    command description 463
    deleting 449, 471
    description 469
    inserting 470
  printing 444, 471
  querying 472
  row
    adding 440-442
    inserting 462-463, 474-475
    types 434-436, 440-441, 473-474
    saving 475-476
  selecting 476-477
  shortcut key listing 463-466
  sorting 437, 440, 478-480
  Speed Reporting 437
  switching between reports 469
  viewing 444, 482-483
Reports command 472-473
Reports dialog box 468
Reports list box 449, 468, 472
Reversing criteria 413
Right indent 65, 90, 117, 543
Right Indent text box 83, 92-93, 117, 543
RIGHT key
  cursor moving 12, 164
  menu selecting 7-8
  moving splits 223-224, 426
  next cell 397, 466
  right one cell 200, 396, 465-466
  right one character 100, 180, 349, 396
  scrolling 54
Right Y-Axis command 317-318

Right Y-Axis text box 274, 303, 328
ROUND function 249
Row
adding 462
copying 174
deleting 179, 187, 448, 455
description 155
freezing 195
inserting 198, 462-463, 474-475
Intr (Introduction) 434-435, 440-441, 451, 473
moving 203, 467-468
multiple 259
Record 434-435, 451-452, 474
selecting 221, 477
Summ (Summary) 434, 440-441, 451-452, 474
tool integration 545
Row argument 239
Row command 217, 473
Row type 434, 436, 440-441, 473-474
RowNumber argument 237
ROWS function 249
Ruler
See also Appendix B
description 5, 53, 125
hiding 125
showing 125
Running foot *See* Footer
Running head *See* Header

Salvage argument 234, 250, 252
Save All command 18, 24, 50
Save As command
backup file opening 24
Communications file saving 492
Communications settings saving 531
description 50, 125-126
directory changing 20, 27
drive changing 20, 27
extension specification 22
form letter saving 76
new file saving 18-19
report saving 475-476
report summary saving 544
saving to another directory 21
saving to another drive 21
template saving 150
text file saving 23
Save As dialog box 19, 24, 125, 502
Save As File list box 501
Save As text box 544
Save command
description 50
existing file saving 18, 23-24
Saving
Communications settings 531
Database 23
files
all files 18, 24
existing 18, 23-24
new 18-19, 24
without formats 126
form letters 76
layout information 42
report summary 544
Reporting 475-476
settings 531
Spreadsheet 23
templates 150
to another directory 21
to another drive 21
Word Processor 23, 125
Scale
See also Ruler
description 318-319
interval 318-319
Logarithmic scaling 321-322
maximum value 318
minimum value 318
types 320-321
X-axis scale 320
Y-axis scale 282, 319
Scatter chart *See* X-Y chart
Scientific notation 187, 191-192, 389, 456
Screen
See also specific screen
color 45-46
commands 4
cursor 5
description 4-5
exiting 346
formula bar 5
highlight 5
menu bar 4
message line 5
status line 5
work area 5
Scrolling
canceling xx
files 112
list box scrolling 12
Scrolling *(continued)*
splits 223, 246
text box scrolling 11
unfrozen rows and columns 227
windows 223, 426
with mouse *See Appendix D*
Word Processor file 54
Search By option 218, 417
Search command 126-127, 218-219, 416-418
Search For option 218, 417
Search For text box 124, 127, 128, 418
Searching
Database 416-419
ranges 219
Spreadsheet 218-219
with wildcards 219, 418
Searching and Replacing 127-130
Second argument 254
SECOND function 238, 250
Select Chart Printer command 38, 323
Select Graphics Printer command 543
Select menu commands
Database
Field 383
Go To 390-391
Record 416
Search 416-418
Reporting
Column 446
Row 473
Spreadsheet
Column 171
Go To 196
Row 217
Search 218-219
Word Processor
Go To 86
Replace 124
Search 126-127
Select Printer command
See also Appendix B
description 50
Select Printer dialog box 37
Select Text Printer command
adding printer 38
changing printer 38
description 220, 419, 476
.PRD file specification 543
Selecting
buttons 14
Charting
cells 323

Selecting *(continued)*
Charting *(continued)*
data point label ranges 323
X-series 323
Y-series 323
color 46
commands 6-7
Database
cells 419
description 419
fields 420
labels 420
records 420
directory 20-21
disk drive 20
files 26
Help topic 33
methods *See* Bold letter method; TAB and DIRECTION key method
options 10, 12-13
printer 37-38
Reporting
cells 476
collapsing selection 477
columns 477
entire report 477
rows 477
Spreadsheet
cells 161, 220-221
columns 221
components 160
fonts 189
numbers 160
ranges 212, 477, 323
rows 221
selection extending 161
subjects 160
Word Processor
description 130
text 55, 57, 130-133
SEND message 528
Send Protocol command 491, 524, 535
Send Text command 491, 525, 535
Send Text dialog box 507
Serial printer 38
Series command 324
Series list box 267, 274, 275, 287
Series option 291, 294, 306, 324
Set button 146
Set option 149
Set Print Area command 167, 221-222
Setting
adjustment 529-530
Communications 495, 529-530
information service 529-530
mainframe computers 529-530
matching settings 499, 528
minicomputers 529-530
modem switches *See Appendix C*
PC-to-PC 529
phone adjustment 530
port 518
printer mode *See Appendix B*
saving settings 531
terminal 530
terminal type 499
Settings command
description 50
exiting Microsoft Works 30
making backup copies 24-25
measurement unit changing 42
Microsoft Works setting changing 46
Settings command dialog box 41, 48, 177
Settings dialog box 46
Setup
Communications 528-531
diskette xx
mouse *See Appendix D*
printer *See Appendix B*
program
Microsoft Works xix, xxii
printer 37
Shareware 494
SHIFT key
See also specific key combination
selecting text 12, 55, 131-132
SHIFT+6 key, print caret (^) 129
SHIFT+CONTROL+; key, enter current time 201, 397, 466
SHIFT+CONTROL+F8 key
select Database 395, 464
select Spreadsheet 199, 201
SHIFT+DIRECTION key
cell selecting 477
character selecting 180, 349, 379
SHIFT+ENTER key
end-of-line mark 97, 102, 151
new header/footer line 89
up one cell in range 200, 396, 465
SHIFT+F1 key, tutorial 35-36, 99, 199, 359
SHIFT+F3 key, copy 99, 172, 199, 464
SHIFT+F6 key, previous window 100, 199, 224, 395
SHIFT+F7 key
repeat Copy command 72, 100, 175, 199, 365, 395, 447, 464
repeat Format command 100, 199, 395, 464
SHIFT+F8 key
select column 171, 199, 201, 395, 464, 477
shrink selection 100, 132
SHIFT+F10 key
view Chart 199
View command 329
view Report 395, 464
SHIFT+movement key, range 201
SHIFT+TAB key, left one cell in range 200, 210, 396, 465
Shortcut commands 80
Shortcut key
See also Key
description 80
listing
Database 394-397
Reporting 463-466
Spreadsheet 199-201
Word Processor 99-102
Show All Characters command 133, 144
Show All Records command 421
Show Border command 325
Show Field Name command 421-422
Show Formulas command 219, 222
Show Legends command 268, 325
Show option 227, 428, 482
Show Printer Fonts command 325
Show Ruler command 85, 91, 125, 133
Sign-On command 531-532
Sign-on sequence 523, 532
Signing on 493, 523, 531-532
SIN (sine) function 250
Sine (SIN) function 250
Single quotation marks (' ')
entering date in formula 177, 369
entering time in formula 178, 370, 386
naming ranges 212
Single Space command 134-136
Size
chart 95, 542-543
font 39, 57, 74, 189, 388, 459
page 42, 45
paper 41

Size *(continued)*
point 47
type 47
Sizes list box 40, 189, 312, 459
Sizes option 68, 388
Skip Capitalized Word option 69
Slices
See also Categories
description 258
exploding 299
with patterns 314
Slices list box 275, 293, 298-299
SLN (straight line depreciation) function 250
Slow Pen Speed check box 278, 316
Software handshaking 511
Sort command
Database sorting 422-425
form letter sorting 77
mailing label sorting 106
pre-printed form sorting 77
Report sorting 437, 440, 478-480
Sort dialog box 440-441
Sortfield 440-441, 478
Sorting
ascending order 423
Database records 356-357, 422-425
descending order 423
form letters 77
inserting breaks 479-480
mailing labels 106
pre-printed forms 77
Reporting file 437, 440, 478-480
sorting order 423, 479
Space After text box 83, 117, 137, 543
Space Before option 117
Space Before text box 83, 106, 117, 137, 543
SPACEBAR, option selecting 13
Spacing
auto spacing 136
between lines 134
between paragraphs 59, 134, 137
double spacing 135-136
line spacing 59
single spacing 134-136
vertical spacing 134
Special characters
description 137
displaying 138
hiding 138
inserting 97-98
Special characters *(continued)*
searching and replacing 129-130
Speed Charting 264, 269-271, 286, 288-290
Speed formatting 185, 375-376
Speed Reporting 437
Spelling checker 63, 69-70, 139-142
Split command 8, 142-143, 223-224, 425-426
SPLIT message 223
Split (window)
creating 142
moving with keyboard 143
moving with mouse *See Appendix D*
removing 143, 224
scrolling 223, 426
Splitting paragraphs 119
Spreadsheet
absolute references 159-160
calculating 169
cell
copying 165-166, 173-176
formatting 164-165
selecting 161, 220-221
changing fonts 39-40
circular reference 170
clearing 186
copying
cells 165-166, 173-176
formats 173
from Database 539-540, 546
from Word Processor 544-546
to Word Processor 539-540, 544-546
creating 160-164
deleting 187
description xvii-xviii, 153-154
editing 156, 163-164, 180-181
erasing 186
filename extension (.WKS) 19, 28, 502
formatting 164-165
formula
definition 168
entering 162, 183-184, 193
evaluating 192
with functions 193
formula bar *See* Formula bar
functions *See* Function
inserting 198
moving 202-203
number entering 161, 182-183
Spreadsheet *(continued)*
page breaking
deleting 179-180, 207
description 206
inserting 207
printing 167, 208-209
protection 210
ranges 211-213
reference
absolute 215
description 213-214
entering 162-164
mixed 216-217
relative 159-160, 214-215
saving 23
searching 218-219
selecting cells 161, 220-221
shortcut keys 199-201
text entering 161, 182
value aligning 169
Spreadsheet Chart menu command 295
Spreadsheet list box 95, 541
Spreadsheet screen 4, 155
SQRT (square root) function 251
Square brackets ([ ]), indent designator 91, 108
Square root (SQRT) function 251
Stacked bar chart 262, 326
Stacked Bar command 326
Stacked scaling 320
Standard deviation (STD) function 251
Startup, Microsoft Works xix-xx, 2-3
Statistic 443, 452, 457
Statistic list box 443
Status information *See* Status line
Status line
character format checking 78, 81
description 53, 143, 426-427, 480-481
messages 225
mode display 164
STD (standard deviation) function 251
STD statistic 443, 452
Stock market chart 301
Stock market price entry 157, 186, 376
Stop Bits option 503
Stop Bits setting 528, 532
Stop Dialing dialog box 509
Storing *See* Saving
Straight line depreciation (SLN) function 250

Strikethrough check box 80
Strikethrough option 68
Strikethrough text 39
Style
See also Appendix B
formatting 57
removing 80
screen display 39, 73
Style command
aligning values 168, 359, 445
description 225-226, 427-428, 481
Style dialog box 445
Subject selecting 160
Subscript 39, 57, 80
Subscript option 68
Subtitle text box 274, 303, 328
Subtract Values option 172
Suggest button 140
Suggest option 70
Suggestions list box 69-70
SUM statistic 443, 452
SUM (total) function 251-252
Sum-of-the-years-digits (SYD) function 252
Summ (Summary) row 434, 440-441, 451-452, 474
Superscript 39, 57, 80
Superscript option 68
Switch Hidden Records command 415-416, 428
Switching
between files 31
between Form and List screens 395
between tools 63
modes 164, 181
records 414-415, 469
splits (windows) 504-505
SYD (sum-of-the-years-digits) function 252
System requirements *See Appendix A*

TAB and DIRECTION key method
activating menu bar 6
button selecting 14
menu opening 7
option selecting 10, 13
TAB key
See also TAB and DIRECTION key method
button selecting 14
defined 102
TAB key *(continued)*
description 144
hanging indents 92-93
next text box 277
next unlocked cell 200
option selecting 10
right one cell in range 200, 396, 465
Tab mark 144, 548
Tab stop
default 92-93, 144, 146, 149
description 143
mailing labels 105
paragraph formatting 59, 82, 85
removing 147
setting 144-146
tool integration 539
Table 148
Tabs command
default tab stop 144
indenting 93
mailing labels 105
options listing 149
text alignment 76
unit specification 47
TAN (tangent) function 253
Tangent (TAN) function 253
Task topic 64, 279, 359, 495
Template 150
Temporarily leaving Microsoft Works 29-30
Term argument 236, 247, 248
TERM (compounding periods) function 253
Terminal
emulation
See also Appendix C
ANSI emulation 507, 534
description 494, 534
VT52 emulation 534
setting adjustment 530
type 534
Terminal command 489, 532-534
Terminal dialog box
Add to Incoming Lines setting 495, 513
Cursor Alternate setting 507
End-of-Line option 524
Full Screen setting 510
Keypad Alternate setting 513
Local Echo option 513
Wraparound setting 535
Terminal Type option 533
Terminal Type settings 499
Test button 107
Test option 122
Text
See also Appendix B
aligning paragraphs 65-66
bold 66, 68, 101
capturing
appending during capture 502
description 501
overwriting during capture 502
procedure 501-503
restart capture 502-503
stop capture 502
tool integration 545, 547-548
centering paragraphs 67
character formatting 67-68
copying
between word processing files 71
description 57
procedure 71
repeat copying 72
definition 158, 342
deleting 11, 55-56, 72
designator (" ") 158, 287, 303, 367
editing 55-57, 73, 156, 163-164
entering
Communications 491
Database 347, 374
Spreadsheet 161, 181-182
Word Processor 56, 98
formatting 57-58
inserting 56, 98
moving 57, 111
plain text 120
printing 37
selecting 55, 57, 130-133
typing 54, 150-151, 491
Text box
See also specific text box
deleting text 11
description 9
editing text 11
option reference 10
selecting 12
Text box option 11
Text file 534, 544
Text font *See Appendix B;* Font
Text option 23, 126
Text styles *See Appendix B;* Style
Time
cell entering 176-179, 368-370, 448

Time *(continued)*
current time 246, 270
field formula entry 369-370, 386
format 43
Time command 482
TIME function 254
Time option 227, 429, 482
Time/Date command
Database 428-429
month name 48
NOW function 246
Reporting 482
Spreadsheet 177, 226-227
TimeNumber argument 238, 244, 250
Title deleting 296
Title Font command 327
Titles command 296, 303, 327-328
Titles dialog box 267
Titles list box 327
Titling Chart 302-303
Tone option 508
Tools
See also specific tool
integrating 537-548
switching between tools 63
Top Margin option 305
Top Margin text box 105, 276
Topic button 33
Total (SUM) function 251-252
Transfer menu commands
Capture Text 501-503
Receive protocol 519-521
Send protocol 524
Send Text 525
TRANSFER SUCCESSFUL message 521
Troubleshooting Communications *See Appendix C*
TRUE function
definition 254
Logical command 191, 202, 390, 398
TTY printer 40
TTY printer description file 37
Tutorial
exiting 35
getting assistance xxiii, 31
Microsoft Works learning xix-xxi
Charting 279
Communications 495
Database 338, 359
Spreadsheet 168
Word Processor 52, 64
shortcut key (SHIFT+F1) 35-36, 99, 199, 359
Tutorial diskette 35-36
Tutorial index 36
Tutorial Index command 50
Tutorial Index dialog box 36
Two Y-Axes command 328-329
Type design *See* Font
Type option 333
Type size 47
Typeface *See* Font
Type list box 441, 463, 475
Typing
format changing 84
text 54, 150-151, 491

Underline check box 80
Underline command 152
Underline option 68, 226, 428, 481
Underlining
shortcut key (CONTROL+U) 101, 152
text format 57
text style 39
Undo command 57, 72, 102, 152
Unfreeze Titles command 227
Unfreezing 195, 227
Units of measure
abbreviations 47, 110
centimeters 42, 47, 110
changing settings 45
conversion equivalents 110
inches 47, 110
line 136
pitch 47, 110
point size 47, 110
standard line unit changing 136
UP key
command selecting 7
moving splits 143, 224
option selecting 12
previous cell 397, 466
scrolling 54
up one cell 200, 396-397, 465
up one line 100, 397
Uploading files 491-492, 524, 535
US Country option 41, 48
Utilities diskette xx

Value alignment 164, 168, 359, 445
ValueIfFalse argument 238
ValueIfTrue argument 238
Values Only option 172
VAR (variance) function 254-255
VAR statistic 443, 452
Variance (VAR) function 254-255
Vertical alignment 77
Vertical line spacing *See* Spacing
Vertical lookup (VLOOKUP) function 237, 255
Vertical text box 107, 122
View command 227-228, 329-330, 482-483
View Form command 429
View List command 344, 366, 429
VLOOKUP (vertical lookup) function 237, 255
VT52 terminal 499, 513, 533-534
VT100 terminal 499, 533-534
VT220 terminal 499, 533-534
VT240 terminal 499, 534

WAITING message 521
.WCM, Communications file extension 19, 28, 504, 529
.WDB, Database file extension 19, 28, 502
Widow line 112
Width
Charting 277
Reporting 483
Width command 227-228, 429-431, 483
Width text box 198, 430
Wildcard
characters 28-29, 219, 418
filename 28-29
searching with 219, 418
Window menu command listing 50
Window (split)
creating 142, 426
moving
with keyboard 143
with mouse *See Appendix D*
removing 143, 224, 426
scrolling 223, 426
switching windows 504-505
.WKS, Spreadsheet file extension 19, 28, 502
Word Processor
characters 57-58, 78-82
chart inserting 94-95, 541-543
copying
from Chart 94-95, 541-542
from Database 539-540

Word Processor *(continued)*
copying *(continued)*
from Spreadsheet 539-540
text 57, 70-72
to Database 544-546
to Spreadsheet 544-546
deleting 55-56, 72
description 51-52
editing 55-57, 73
file
creating 54
inserting chart 94-95, 541-543
sizing chart 542-543
filename extension (.WPS) 19, 28, 502
font changing 39-40
form letters 74-78
formatting
characters 57-58, 79-81
paragraphs 59-60, 82-85
text 57-58
inserting chart into 94-95, 541-543
integrating from other tools 538-546
measurement unit specification 47
moving text 54, 57, 111-112
page breaking
automatic 108, 112
deleting 113, 207
manual 108, 112-114
mark 207
preventing 83, 113-114, 117
shortcut key (CONTROL+ENTER) 97, 102, 113
page layout 61
paragraph
aligning 65-66
description 118-119
formatting 59-60, 82-85
indenting 90-94
joining 120
splitting 119
pre-printed forms 74-78
printing 61-62, 74
saving 23, 125-126
screen 53-54
searching 126-130
selecting text 55, 57, 130-133
shortcut keys 99-102
spelling checker 63
text
bold 66
copying 57, 70-72
Word Processor *(continued)*
text *(continued)*
deleting 55, 72
editing 55, 57, 73
formatting 57-58
inserting 56, 98
moving 57, 111-112
selecting 55, 57, 130-133
typing 54, 150-151
Word Processor screen 53-54
Wordwrap 54, 75, 151
Work area 5, 15, 53
Works *See* Microsoft Works
Works format file 23, 28
Works option 126
Works settings, changing 45-49
WORKS.INI file 30
.WPS, Word Processor file extension 19, 28, 502
Wraparound option 533
Wraparound setting 535

X, check box activation symbol 9, 13
X argument
ABS function 229
ACOS function 230
ASIN function 230
ATAN function 230
COS function 232
EXP function 235
INT function 240
ISERR function 240-241
ISNA function 241-242
LN function 242
LOG function 243
ROUND function 249
SIN function 250
SQRT function 251
TAN function 253
X-axis
category labeling 287
chart size 95
data point positioning 260
description 258, 282-283
height 543
scale 320
X-Y command 332
X-Axis command 330-331
X-Axis text box 274, 303, 328
X-coordinate argument 230
X-series 265-266, 287, 331, 332
X-Series command 331
X-Y chart 264, 291, 320, 332
X-Y command 332
XMODEM protocol
description 519, 535
downloading files 491, 510
receiving files 521
sending files 525-526
XOn/XOff handshaking system 504, 511

Y-axis
description 258, 282-283
right Y-axis 328-329
scale 319, 282
X-Y command 332
Y-Axis command 332-333
Y-axis text box 274, 303, 328
Y-coordinate argument 230
Y-series
data point 260, 274
deleting 335
description 259
formatting 275
labeling data points 274
procedure 334-335
range 265, 269
Speed Charting 269-271, 288
X-Y command 332
Year argument 233
YEAR function 234, 255

Appendixes to Microsoft Works Reference

For IBM® Personal Computers and Compatibles
and for the IBM Personal System/2™ Series

Microsoft Corporation

Contents

Appendix A System Requirements A1

Appendix B Printing, Fonts, and Styles A3
Printers and Printing A3
Text Fonts and Styles A8
Chart Fonts and Styles A11

Appendix C Modems, Cables, and Terminal Emulation A15
Modem Installation A15
Connecting with a Cable A18
Terminal Emulation A20
Troubleshooting Communications A23
Communications Error Messages A25

Appendix D Using a Mouse with Works A29
Using Setup to Install Your Mouse Driver A29
What You'll See When You Have a Mouse Installed A29
Mouse Skills A31
Using a Mouse with the Works Tools A31

Appendix E Using Works with Other Applications A41
Using Lotus 1-2-3 Files A41
Using Works with Other Databases and Spreadsheets A42
Using Works with Other Word Processors A43

Appendix A
System Requirements

You need specific hardware and software to use Works. In the following table, the left column tells you what you need. The right column gives specific information and provides alternatives where appropriate.

You need	Your choices are
Computer	An IBM Personal Computer, or an IBM Personal System/2, or a 100% compatible computer.
Memory	384K minimum.
Diskette drives	Two 5 1/4″ diskette drives (360K), or one 3 1/2″ diskette drive (720K), or a hard disk drive.
Monitor and adapter	Supported graphics adapter cards are listed in the Setup program.
DOS	Version 2.0 or a later version.
Mouse (optional)	A bus mouse or a serial mouse.
Modem (optional)	A 100% Hayes-compatible modem.
Printer and/or plotter (optional)	

For more information on using a mouse with Works, see Appendix D, "Using a Mouse with Works."

For more information on printers and printing, see Appendix B, "Printing, Fonts, and Styles."

Appendixes

Appendix B
Printing, Fonts, and Styles

This appendix contains detailed information to help you print the text and charts you create with Works.

The first section, "Printers and Printing," describes:

- Installing, cabling, configuring, and checking your printer.
- Telling Works what printer you will use.
- Printing text and charts with Works.
- Using Works with more than one printer.
- Printer messages.

The rest of this appendix explains how to control the size and style of the text in Works files when you print them. It is divided into two sections, "Text Fonts and Styles" and "Chart Fonts and Styles," because Works handles the printing of text and graphics characters differently.

Printers and Printing

This section covers general instructions for setting up your printer and for printing; it does not give details on using your particular printer. Read your printer manual thoroughly to get specific information about using your printer. The more you know about your printer, the easier it will be to print with it.

There are three steps to setting up your printer and printing:

- Install your printer according to the manufacturer's instructions. See "Installing Your Printer" in this appendix for general terms and procedures.
- Tell Works which printer or printers you are using. You do this by running the Works Setup program. For details, see "Specifying Your Printer" in this appendix, and the "Using the Setup Program" section of the *Microsoft Works Reference*.
- Print with the Print command. When Works is printing, it displays messages telling you which page is being printed and how to cancel printing. Depending on what you are printing and what kind of printer you are using, Works may also ask you questions before it can continue printing. These questions are described in the "Printer Messages" section of this appendix.

Installing Your Printer

If your printer is installed correctly, skip to the next section, "Specifying Your Printer." Read on if you have had problems printing.

Type of Interface

Your computer sends information to your printer through an interface. You need to know what type of interface your printer uses. Your printer uses either a parallel or a serial interface. A parallel interface is also known as a Centronics interface. A serial interface is also known as an asynchronous, bisynchronous, or RS-232 interface.

Ports

The computer uses ports to connect with other devices, such as printers. Ports are usually located at the back of your computer. LPT1, LPT2, LPT3, COM1, and COM2 are input/output ports. You connect a parallel printer to LPT1, LPT2, or LPT3, the parallel communications ports. You connect a serial printer to COM1 or COM2, the serial communications ports.

Cables

Make sure you have the correct cable for your printer, especially if you are connecting the printer to a serial port. Use the cable that came with your printer, or purchase one from your printer dealer. If your printer didn't come with a cable, and if you want to use a serial port for your printer, you may be able to use a standard RS-232 cable. If a standard RS-232 cable doesn't work, you may need to purchase a cable made for your serial printer. Many serial printers require a "null modem" cable, which reverses certain lines.

If you are not sure what kind of cable your printer requires, ask your printer dealer or check your printer manual. Make sure your cable is connected to the correct port on your computer.

Printer Configuration Switches

All of the switches on your printer must be set according to the manufacturer's specifications. If you have a serial printer, you need to make sure you set the correct baud rate, parity, data bits, and stop bits for the serial port to agree with your printer. If the baud rate or parity is set incorrectly, either the printer won't print or the output will be garbled.

Use the DOS MODE command to specify these settings for the serial port. For example, to set the COM1 serial port to baud rate 9600, no parity, 8 data bits, and 1 stop bit, at the DOS prompt type

MODE COM1:9600,N,8,1,P

You may want to add this command to your AUTOEXEC.BAT file so that the settings are made automatically each time you start up your computer. For more information on your AUTOEXEC.BAT file, see the DOS manual that came with your computer.

Printer Mode Settings

Some printers have switches to set for printing draft, letter quality, or compressed text. Set the switches for the kind of output you want.

Margins

When you print with Works, you may need to adjust margins and headers and footers to fit the requirements of your printer. For example, some printers can print lines up to only 8 inches long; others advance the paper before starting to print.

On some printers, you may need to check the position of the print head. The top margin will start where the print head is when you choose the Print command to begin printing. Check your printer manual for information on the print area and where printing will start.

Specifying Your Printer

To print text with Works, you must tell it what text printer you are using. To print charts, you must tell Works what chart printer you are using. Specify your printer(s) with the Works Setup program before you run Works for the first time. The Setup program makes a working copy of the Works Program disk and asks you what text and chart printer(s) you want to use.

The Setup Program

The Setup program presents a list of printers supported by Works. Most likely you use just one printer, and should select just that printer from the list. If you have more than one printer connected to your computer, or you use your program diskette on other computers that have different printers, you can select more than one printer from the list.

Printer descriptions, also called printer drivers, are contained in printer description files on diskettes supplied with Works. When you select a printer in the Setup program, Works copies the correct printer description file from one of the Works Printer disks to your program diskette. (Text and chart printer description files have the filename extensions .PRD and .GPD, respectively.) Before you print, the printer description file for your printer must be on the Works Program disk.

Works needs to know which printer to use, so the Setup program puts the name of the selected printer description file in the WORKS.INI file. When you start Works, it looks at the WORKS.INI file and uses the printer description file specified there. Works also needs to know which port the printer is connected to and whether the printer uses continuous page feed or manual page feed. Setup puts this information in the WORKS.INI file as well.

The Select Printer Command

While in any of the Works tools, you can check which text and chart printers Works is using by choosing Select Text Printer or Select Chart Printer from the Print menu. The dialog box has a Printers list box that lists all your printer description files on the program diskette. The one that Works is using is selected in the list.

Note Because filenames can only be up to 8 characters long, the printer description filenames may be rather cryptic. For example, HPLASMS is the name of the printer for the Hewlett-Packard LaserJet Printer with a Microsoft font cartridge.

If you don't have a WORKS.INI file, either because you did not run the Setup program or because you deleted the file, then no printer will be selected in the list, and you should select one. If there are no printer files on your program diskette, either because you did not specify any in the Setup program or because you deleted them, then the list will be empty, and you should run the Setup program to put the proper printer description files on your program diskette.

The Select Text Printer dialog box specifies the port the printer is connected to and whether the printer uses continuous or manual page feed. If either of these settings is incorrect, choose the correct setting.

The first time you start Works after running Setup, you might want to check the Select Text Printer and Select Chart Printer commands to make sure the correct printers, ports, and page feeds are set.

Printing Text and Charts

With Works, you can print a spreadsheet chart as part of a word processing file. For information on using the Spreadsheet and the Word Processor together, see Chapter 16, "Exchanging Information Between Tools." To print a spreadsheet chart as part of a word processing file, you must have a printer that can print both text and charts, such as a dot matrix printer. You need to specify both your text printer and your chart printer exactly as you would if you were printing the word processing file and chart separately.

Changing Printers, Adding and Removing Printer Description Files

You may want to use Works with more than one printer if:

- You have more than one printer connected to your computer.
- You use your program diskette on different computers that have different printers.
- You replace your current printer with a different printer.

In all cases, the printer description file for the printer you are using must be on your program diskette and must be selected in the Select Printer command. If your program diskette contains printer files for all the printers you will use, all you need to do to change printers is choose Select Printer in Works and select the file for the new printer. If your program diskette doesn't contain the printer file for the new printer, use the Setup program to add it.

When you are using Works on computers that have different printers, and you don't have room for more than one printer file on your program diskette, you will have to add and remove printer files every time you switch machines. Instead, you might consider making a different program diskette, with different printer files, for each computer you use.

More Information on Printer Description Files

Some text printers, like the Hewlett-Packard LaserJet Printer, use font cartridges. Works uses different printer files for each font cartridge. If your printer uses font cartridges, make sure you choose the cartridge letter, number, or name that matches the cartridge for your printer. If you use several different font cartridges with your printer, you should put the printer description files for each of them on your program diskette and use the Select Text Printer command in Works to switch between them.

On some chart printers, Works can print in both low-resolution and high-resolution. Works has different printer files for each resolution. Low-resolution printing is much faster than high-resolution but doesn't look as good. Commonly you print your rough draft charts in low-resolution, and then when everything is the way you want it, print your final copy in high-resolution. For example, there are two chart printer description files for Epson dot matrix printers. If you need them, put both the low- and high-resolution files on your program diskette and use the Select Chart Printer command to switch between them.

Printer Messages

To start printing, choose one of the Print commands from the Print menu. When Works is printing, the message line displays:

Press ESCAPE to cancel printing.

The status line displays the page number of the page being printed.

If you want to interrupt the printing, press ESCAPE. Works asks you if you want to continue printing; if you press ENTER, printing resumes. Press ESCAPE to cancel printing.

If you are printing text on a print wheel (impact) printer, Works asks you to mount the proper print wheel on your printer before it starts printing. Make sure the print wheel for the specified font is mounted and then press ENTER. If you are printing a word processing file, and the font changes in the middle of the file, the same dialog box will appear again, asking you to mount the print wheel for the new font.

Similarly, if you are printing a chart on a plotter, Works asks you to mount the proper pen colors on your printer before it starts printing. Make sure the specified pen colors are mounted in the plotter's pen-holder in the specified order and then press ENTER. If your chart uses more colors than the plotter can hold at one time, the dialog box asks you to insert the pens with the necessary colors during printing.

If your printer has manual rather than continuous page feed, when the printer gets to the end of a page, Works asks you to insert a new page. After inserting the new page, press ENTER. Works does not ask you to insert a new page before printing the first page, so make sure you have a new page already inserted before choosing the Print command.

Note If you press ESCAPE in any of the three dialog boxes, Works asks you if you want to continue printing. If you press ENTER, Works brings up the original dialog box again. Press ESCAPE to cancel printing.

If other errors occur during printing, Works asks you if you want to continue printing. If you press ENTER, printing resumes. If the same error occurs again, the dialog box appears again. Press ESCAPE to cancel printing.

If you have not specified a printer with the Select Printer command when you try to print, Works will inform you that no printer was selected. This happens most commonly in Charting. If you have not selected a chart printer and you choose either Print from the Print menu or List Printer Formats from the Options menu, you get this dialog box. After pressing ENTER, you must select a printer, either with the Setup program or with the Select Printer command on the Print menu. For more information on selecting a printer, see "Specifying Your Printer" in this appendix. If no text printer driver is specified, Works automatically uses the TTY (teletype) printer driver.

Text Fonts and Styles

This section covers using fonts and styles when printing from the Word Processor, Spreadsheet, Database, and Reporting.

Text Fonts

Works supports several different types of text printers, including dot matrix printers, print wheel or impact printers, and sophisticated printers like laser printers and typesetters. With dot matrix printers, Works font names correspond to different print modes your printer uses. With print wheel printers, font names correspond to print wheel names and type sizes. Font means the shape and size of characters (the family, style, and size of the type) on laser printers and typesetters.

Font Size, Points, and Pitch

Fonts come in different sizes. The height of a font is measured in units called points. A point is 1/72 of an inch. A line of characters in a 12-point font is 12/72 or 1/6 of an inch high, which gives 6 lines of text per inch. The width of a font is often given in terms of its pitch. "10 pitch" or "p10" means 10 characters per inch, and one p10 character is 1/10 of an inch wide. "12 pitch" or "p12" means 12 characters per inch, and one p12 character is 1/12 of an inch wide.

The height and width of a font are independent of each other. For example, a particular printer may have two fonts which are both 14 points high but which have different widths. However, two height and width combinations are particularly common. A 12-point font (6 lines per inch) is generally 10-pitch (10 characters per inch), and a 10-point font (7.2 lines per inch) is generally 12-pitch (12 characters per inch).

You choose fonts with the Print Font command in the Spreadsheet, the Database, and Reporting and with the Format Character command in the Word Processor. In the dialog box for both commands there is a Fonts list box, which lists all the fonts available to you on the printer specified in the Select Text Printer command. There is also a Sizes list box which shows all the sizes (in points) for the font selected in the Fonts list box.

The screen can display text in one font and size only. When you change the font and size, the characters on the screen will not change, although the font and size will be correct when you print.

Fixed-Pitch and Proportional Fonts

A font may be either fixed-pitch or proportional. All the characters in the font have the same width in a fixed-pitch font. For example, in a fixed-pitch font the "i" and "w" have the same width. In a proportional font, the different characters have different widths; the "i" is much narrower than the "w." It is easiest for mechanical and electronic devices to display fixed-pitch fonts. Most computer screens display text in a fixed-pitch font.

Proportional fonts are generally more pleasing to the eye; books and manuals are generally printed in a proportional font.

All printers support at least one fixed-pitch font and some may also support one or more proportional fonts.

The Word Processor works with both fixed-pitch and proportional fonts. However, the Spreadsheet and Database assume that the font you use is fixed-pitch. If you choose a proportional font rather than a fixed-pitch font, the columns of your spreadsheet, database, or report will not line up exactly when you print.

Text Styles

In the Spreadsheet, Database, and Reporting, you can apply the styles bold, italic, and underline to characters. In the Word Processor, you can also use strikethrough, superscript, and subscript. The screen can display text in two styles only, plain and bold, so all character styles are always displayed as bold on the screen.

When you print, you will see the correct character styles if your printer is capable of printing them. Only some printers support italic, but most printers support all the other styles.

Fonts in the Word Processor

Although the Word Processor supports different fonts and sizes, including both fixed-pitch and proportional fonts, the screen can display text in one font and size only. This causes some differences between the text you see on the screen and what you see on the printed page.

The Ruler

The numbers on the ruler represent inches, and each mark represents 1/10 of an inch. The ruler displays the positions of the left, first line, and right indents and the tab stops for the selected paragraph as measured from the left margin of the page. For example, suppose the page width is 8.5 inches and the left and right margins are 1.25 inches. That means that the print area (the page width minus the left and right margins), is 6 inches wide. If the selected paragraph has left, first line, and right indents of 0, 0.5, and 0 inches, then the left indent is 0 inches (on the left margin), the first line indent is 0.5 inch from the left margin, and the right indent is 0 inches (on the right margin), or 6 inches from the left margin. The ruler will display "[" at the 0, "!" at the fifth mark after the 0, and "]" at the 6.

If you use a 10-pitch font (10 characters per inch), then each character, like each mark on the ruler, represents 1/10 of an inch. In this case, the ruler measures not only inches, but also numbers of characters. For example, the 50th character in a line is displayed under the number 5 on the ruler and will print 5 inches from the left margin. What you see on the screen is exactly what you will see when you print.

However, if the font is not 10-pitch, this is not the case. For example, suppose that your font is 12-pitch (12 characters per inch) and that the right indent is 6 inches from the left margin, as described above, so that the right margin indicator, "]" , is on the 6 on the ruler. Each line can be up to 6 inches or 72 characters long before wordwrap breaks the line. The 60th character on a line will appear on the screen under the 6 on the ruler, even though it will actually print 5 inches from the left margin. Similarly, the 66th character on a line will appear under the fifth mark after the 6 on the ruler, even though it will actually print 5.5 inches from the left margin.

Displayed Text Vs. Printed Text

This is a summary of the differences between the way text is displayed on your screen and the way it will appear on the page when you print:

- The ruler always shows the positions, to the nearest 1/10 of an inch, of the left, first line, and right indents and tab stops of the selected paragraph. These are the same positions you will see when you print.
- The measurements on the ruler and the characters displayed on the screen line up only if you use a 10-pitch font. You can think of the ruler as measuring numbers of 10-pitch characters, rather than tenths of inches, if you prefer.
- If you use a proportional font, the alignment of some paragraph formats (tabs, for instance) may look incorrect on the screen. They will align properly when you print.
- Regardless of the width of the font you use, the screen always displays line breaks on the screen where they will print.
- You can use the Window Settings command to change the default unit of measurement to something other than inches, for example centimeters. However, the ruler still shows the positions in inches or numbers of p10 characters.

Chart Fonts and Styles

This section covers what you need to know to control the fonts and styles for chart titles and labels when you view and print charts with Works.

Chart Fonts

With Works, you can print charts with several different types of chart printers, including dot matrix printers, plotters, and sophisticated printers like the Hewlett-Packard LaserJet. These printers are divided into two groups: raster and stroke devices. Plotters are stroke devices, while all other printers are raster devices. Your computer screen is also a raster device.

Works uses two different kinds of fonts in Charting: the screen font that your screen uses to display text, and software fonts. The software fonts are contained in font files on the Printer Disk 2 supplied with Works.

Like the printers, the fonts are divided into two groups: raster fonts and stroke fonts. The screen font and some of the software fonts (with the filename extension .RFT) are raster fonts. The rest of the software fonts (with the filename extension .SFT) are stroke fonts. Stroke devices can display only stroke fonts. Raster devices can display not only raster fonts but also stroke fonts.

You use software fonts if you want to display or print charts on a raster device using a nicer font than the screen font. If you are happy with the way the screen font looks, you need not use software fonts. You must use software stroke fonts if you want to print charts on a stroke device.

Chart Styles

Unlike styles in the Works Word Processor, Spreadsheet, Database, and Reporting, styles in Charting are considered to be part of the fonts. A font can be either plain, bold, italic, or both bold and italic.

Choosing Fonts and Displaying Fonts on the Screen

Works lets you choose one font for the chart title and another font for all the other text in the chart with the Title Font and Other Font commands in the Print menu. The fonts you choose determine what will be used to print the chart. What is actually displayed on your screen when you view a chart is controlled by the Show Printer Fonts command in the Options menu.

When you create a chart, Show Printer Fonts is off and Works uses only the screen font to display the chart on your screen, regardless of what fonts you may have specified with the Font commands. If you choose Show Printer Fonts, Works uses the fonts you specified with the Font commands to display the chart.

It is much faster to display the screen font on the screen than to display a software font, so Show Printer Fonts should be off if you want Works to display charts as quickly as possible.

Using Software Font Files

In order to display a software font, on either your screen or your printer, Works must read the font file for the font from a disk. If the font file is on your program diskette, Works will find and read the font file immediately.

You can use the Setup program to copy all the font files to your program diskette, if there is enough space on the disk. Your program diskette may have room for only some of the font files. In that case, you can use the DOS COPY command to copy just the font files you use most often to your program diskette. Or, your program diskette may not have room for any of the font files. This is the case if your computer has 360K diskette drives.

Even if you don't have room on your program diskette for font files, you can still use them. If you are using a font file that is not on the program diskette, when you try to display the font on either your screen or your printer, Works will ask you to insert the Printer Disk 2 containing the font file. While inserting the Printer Disk 2 whenever you print is only a minor inconvenience, doing so every time you display the chart on the screen is a major inconvenience. If the Show Printer Fonts command is off, then Works will ask for the font files only when printing.

Fonts and Sizes in the Font Commands

The Title Font and Other Font commands both have the same dialog box with a list box of fonts and a list box of font sizes. The Fonts list box lists all the fonts available on the printer specified in the Select Chart Printer command. If the printer is a raster device, or if you have not yet specified a chart printer, the list box shows the screen font and all the software raster and stroke fonts. If the printer is a stroke device, the list box shows just the software stroke fonts. So the Fonts list box contains either:

Raster printer or no printer specified	**Stroke printer**
Screen	Modern B
Modern C	Bold Modern B
Bold Modern C	Roman B
Italic Modern C	Bold Roman B
Modern B	Italic Roman B
Bold Modern B	Bold Italic Roman B
Roman B	Script B
Bold Roman B	
Italic Roman B	
Bold Italic Roman B	
Script B	

Raster fonts are available only in certain fixed sizes and each different size of font is contained in a separate font file. Stroke fonts are available in all even-numbered sizes from 6 to 126, all contained in one font file. The screen font may come in either one or two sizes, depending on your computer.

The sizes shown in the Sizes list box are the actual point sizes in which the font will be printed with the printer specified in the Select Chart Printer command. For a description of how fonts are measured in points, see "Text Fonts and Styles" in this appendix.

Software Font Files

The following software raster fonts are provided with Works:

Font	Font files
Modern C	F00225.RFT, F00230.RFT, F00235.RFT
Bold Modern C	F13025.RFT, F13030.RFT, F13035.RFT
Italic Modern C	F06625.RFT, F06630.RFT, F06635.RFT

The following software stroke fonts are provided with Works:

Font	Font file
Modern B	F001.SFT
Bold Modern B	F129.SFT
Roman B	F017.SFT
Bold Roman B	F145.SFT
Italic Roman B	F081.SFT
Bold Italic Roman B	F209.SFT
Script B	F033.SFT

You can see and experiment with the various fonts by using the Show Printer Fonts command, and by printing charts with your printer.

Appendix C
Modems, Cables, and Terminal Emulation

Chapter 14, "Introduction to Communications," and Chapter 15, "Communications Reference," introduce communications topics and how to use Works to send and receive information. This appendix provides more information you may need when using Works Communications with different modems, connecting to another computer with a cable, or using your computer as a terminal.

Modem Installation

There are two basic types of modems: external ones that attach to your computer with a cable, and internal ones in the form of a circuit card you install in a slot inside your computer.

Unless you already have your computer set up with a modem, getting one properly installed is your first step in using Communications. Your best bet is to carefully follow the installation instructions supplied with your modem, and consult with your computer dealer if you have problems.

Modem Switch Settings

Most modems, internal or external, have a series of switches that determine how the modem will interact with the communications software package that controls it. You need to set these switches so that Works can communicate with your modem. With an internal modem, be sure to set these switches before installing the modem. Because there are many varieties of "Hayes-compatible" modems, it is not possible to identify what switch controls what setting on every modem; but there are common settings you need to make. Refer to the following table of modem settings, and match them to the switch positions as defined by your modem's documentation.

Modem setting	Effect
Commands enabled	Allows modem to respond to commands Works sends.
Result codes sent	Sends results to Works so Works knows modem status.
Word result codes	You get descriptive result codes of what the modem is doing; for example, CONNECT or BUSY.

Modem setting	Effect
Respond to DTR	Modem will hang up when you disconnect.
Characters echoed in command state	You see the commands Works sends to the modem; for example, ATDT.
Auto-Answer disabled	Leave auto-answer off, because Works turns it on for you when you select the Auto-Answer option in the Options Phone dialog box.

The first three settings are critical. Works must be able to send commands to the modem, and needs the modem to send back word result codes in response to those commands. You should also set the modem so that it will respond to Data Terminal Ready (DTR) so it will hang up when you disconnect.

Tip Beware of "interrupt conflicts" caused by improper jumper or switch settings on the communications adapter or multifunction cards. DOS recognizes two serial ports, COM1 and COM2. If you have two serial ports, one must be set to COM1, and the other to COM2. You will get error conditions if you have them both set to the same COM line. An example might be if you have a serial mouse card installed and set for COM1, and have the communcations adapter also set for COM1.

If you have call waiting through your telephone company, turn it off when using your modem. Call waiting will break your connection when you are trying to use the modem.

Using an Acoustic Coupler

An acoustic coupler is an external modem that does not plug directly into the phone line. Instead, you place the phone receiver into two rubber cups on the modem; the data from your computer goes out the mouthpiece and incoming data is received in the earpiece. (People who travel often use acoustic couplers because hotel rooms usually don't have modular phone jacks.) Acoustic couplers usually are limited to 300 baud.

To place a call with an acoustic coupler

1. From the Options menu, choose Phone. Make sure the Phone Number setting in the Options Phone dialog box is blank, and set Dial Type (Tone or Pulse) to match the phone you are using.
2. From the Options menu, choose Communications. Set baud rate to 300.
3. From the Connect menu, choose Connect.
4. Dial the number you want to call.
5. When you hear the modem on the other end answer the phone and respond with an acknowledgment signal, place the telephone receiver in the modem's coupler.

Using a Non-Hayes-Compatible or Manual Dial Modem

Works is designed to work best with Hayes-compatible direct-connect auto-dial modems. They can respond to commands from Works and dial a number automatically. But you can still use Works Communications even if your modem uses manual dialing or is not Hayes-compatible.

To place a call with a manual dial modem

Manual dial modems may have switches labeled "ORG/ANS" (originate or answer) and "TALK/DATA." Put your modem into originate mode to make a call. Usually you dial the number in TALK mode, then switch to DATA when the other modem answers. Check the instructions that came with your modem.

1. Open a Communications file. Make sure the Phone Number and Modem Setup settings in the Options Phone dialog box are blank.
2. From the Connect menu, choose Connect.
3. Dial the phone number. Wait to hear the high-pitched response tone from the other modem, then switch to DATA (if necessary).

To place a call with a non-Hayes-compatible modem

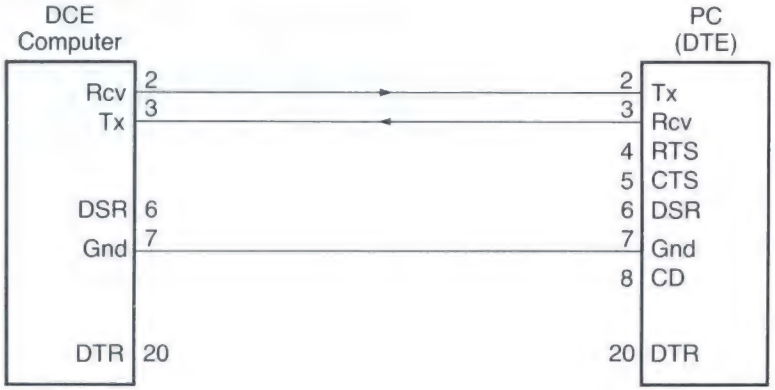
1. From the Options menu, choose Phone.
2. In the Modem Setup text box, type the command that causes your modem to dial a phone number, followed by the number you want it to dial. Leave Phone Number blank.
3. Press ENTER.

   Works will send the Modem Setup to the modem, causing it to dial.
4. From the Connect menu, choose Connect.

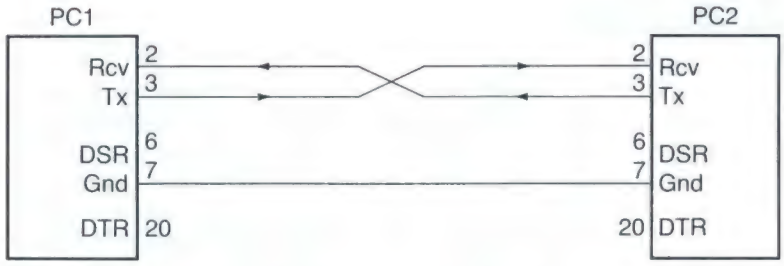
Connecting with a Cable

You can connect your computer directly to another computer with a cable. You can connect a personal computer to a mainframe or minicomputer, or connect two personal computers together. The cabling requirements may vary depending on the situation.

For most PC to mainframe or minicomputer links, you use a standard RS-232-C cable, like the one that usually goes between an external modem and your PC. If you are connecting your PC to another PC or to a Macintosh, you need a special null modem cable, also known as a "modem eliminator" or "reversed" cable. In a null modem cable, the wires for transmitting and receiving data (pins 2 and 3) are crossed, so that each computer thinks it is communicating with a modem.

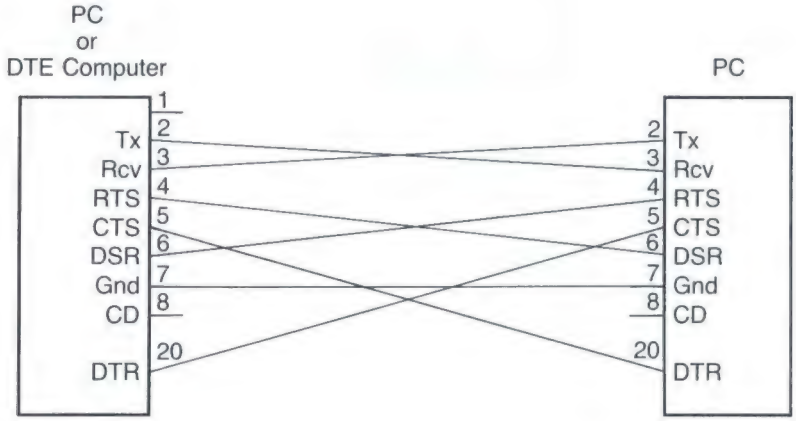


Simple 3-Wire RS-232-C Cable



Simple 3-Wire Null Modem Cable

To take advantage of Hardware Handshaking (an option in the Communication dialog box on the Options menu), you need at least a seven-wire connection. The additional wires carry the signals the computers send to each other to indicate readiness to send or receive data.



7-Wire Null Modem Cable for Hardware Handshaking

You should make sure you have the right cables for your particular computer-to-computer link. Computers and peripherals come in two types: Data Terminal Equipment (DTE) and Data Communications Equipment (DCE). Works is always DTE; you need to find out if the computer you want to cable to is DCE or DTE. If you are having cabling problems, it may be that your cable is set up wrong: use the null modem cable configuration if the other computer is DTE; use a standard RS-232-C cable if the other computer is DCE.

Terminal Emulation

A terminal is a keyboard and screen combination usually used to communicate with a host computer. There are many different types of terminals. Works can emulate or mimic two of the most common types: the VT52 terminal (very similar to the Zenith Z19), and the ANSI (equivalent to the DEC VT100/VT220 terminals). You choose which type of terminal you want to emulate by selecting Terminal Type in the Options Terminal dialog box.

You will probably want to use the Full Screen option (Terminal command) when doing terminal emulation, as the host will expect to be able to display information on, and move the cursor to, all parts of your screen.

The terminal displays the characters it receives on its screen. When the terminal receives other special codes (known as escape sequences) from the host it does not display them, but interprets them as instructions to perform special functions such as moving the cursor or deleting lines on the screen.

There are some sophisticated escape sequences that Works does not try to emulate. For example, the VT100 terminal can display characters that are twice the height of normal characters. Works terminal emulation doesn't support this capability. Here are the terminal features that Works does support:

Cursor Movement

Cursor up, down, right, and left
Cursor home
Cursor direct addressing
Save/Restore cursor position
Tab/Back tab
Index/Reverse index

Editing

Erase display
Erase to beginning of display
Erase to end of display
Erase line
Erase to beginning of line
Erase to end of line
Insert line
Delete line
Insert character (ANSI mode only)
Delete character

Mode

Alternate keypad mode
Insert character mode
Reverse video mode
Cursor key application mode (ANSI mode only)
Auto LF on CR mode
Auto CR on LF mode
Wrap around at EOL mode
Enable 25th line mode
Enable/Disable cursor mode
Enter ANSI mode (VT52 mode only)
Enter VT52 mode (ANSI mode only)

Tabs

Set tab at current position
Clear tab at current position
Clear all tabs

Other

Set/Clear reverse video attribute
Identify as VT52 - respond ESCAPE / K (VT52 mode only)
Identify as VT100 - respond ESCAPE [?1;2c (ANSI mode only)
Cursor position report
Reset terminal

Because there are keys on the VT52 and ANSI terminals that don't exist on the IBM PC keyboard, Works uses certain PC keyboard keys instead. Below is a description of which PC keys correspond to the keys found on VT52 and ANSI terminal keyboards.

VT100/VT52 key	PC Keypad key	NUMLOCK key
0	0 INSERT	ON
1	1 END	ON
2	2 DOWN	ON
3	3 PAGE DOWN	ON
4	4 LEFT	ON
5	5	ON
6	6 RIGHT	ON
7	7 HOME	ON
8	8 UP	ON
9	9 PAGE UP	ON
-	-	ON
,	PRINTSCREEN	ON
ENTER	+	ON

VT100/VT52 key	PC Keypad key	NUMLOCK key
UP	8 UP	OFF
DOWN	2 DOWN	OFF
RIGHT	6 RIGHT	OFF
LEFT	4 LEFT	OFF
PF1	F1	
PF2	F2	
PF3	F3	
PF4	F4	

Note to Zenith Z-19 and Z-29 Users Works can also emulate the Zenith Z-19 or the Z-29 terminals. With the Terminal command on the Options menu, choose Terminal Type VT52.

The Z-19 keyboard emulation is identical to VT100 emulation (described above) except for the help and function keys. The following table describes which keys on the PC correspond to the Z-19 function keys:

Z19/Z29 key	PC Keypad key
F1	F4
F2	F5
F3	F6
F4	F7
F5	F8
F6	F1
F7	F2
F8	F3
F9	F9
Help	F10

To put your PC keypad into Application mode, select Keypad Alternate (with the Terminal command on the Options menu). Make sure the NUMLOCK key is on.

When doing ANSI terminal emulation, you can put your PC cursor keys into Application mode by selecting Cursor Key Alternate (with the Terminal command on the Options menu). Make sure the NUMLOCK key is off.

Troubleshooting Communications

There are two general problem areas in Communications: trouble connecting with the host; or no problems connecting, but things don't go right during the session. This section outlines the most common communications problems, and offers possible solutions.

Trouble Establishing a Connection

If you choose Connect from the Connect menu and nothing happens, the first thing to do is check all cables and connectors, and make sure the modem is turned on (if it is an external model). If everything appears OK, your problem may be one or more of the following:

Problem	Cause/Solution
Wrong COM port selected	Your modem is attached to COM2, and you have COM1 selected in the Options Communication dialog box (or vice versa). Try selecting the other COM port.
Switch settings wrong on modem	Modem must be set to respond to command and send back word result codes. Check switch settings in your modem's documentation.
Mismatched baud rates	You have selected a baud rate that the modem on the other end of the line can't use. Check your baud rate and change if necessary.
Interrupt conflict	If you have two communications cards, you may have them both set to access the same COM port. Change the COM setting on one of the cards. Or, you may have a modem card set for COM1 or COM2, but the switch setting does not match the interrupt jumper. For COM1, set the jumper to IRQ4. For COM2, set the jumper to IRQ3.

Problem	Cause/Solution
Cable problems	When using a direct cable connection, you may have the wrong type of cable for linking the two computers. For more information, see "Connecting with a Cable" in this appendix. Replace the cable, or troubleshoot it if you have equipment to do so.

Trouble After Connecting

If you establish communications with the host computer, but things don't appear right, you may have to adjust some of the Communications settings.

Problem	Cause/Solution
Garbled text, strange characters on the screen.	You probably have a mismatch in communications settings between your PC and the host. Check the host's requirements; try adjusting parity, data bits, and number of stop bits (Communication command, Options menu).
Doubled text.	You have Local Echo on, but host is already echoing back the characters you type. Turn Local Echo off (Terminal command, Options menu).
You don't see what you type when connected.	You have Local Echo off, and host does not echo. Turn Local Echo on (Terminal command, Options menu).
Incoming text is double-spaced.	Change Add to Incoming Lines setting to Nothing (Terminal command, Options menu).
Incoming lines overwrite each other.	Change Add to Incoming Lines setting to CR (Carriage Return) or LF (Line Feed) using the Options Terminal command.

Problem	Cause/Solution
When using Send Text, parts of the outgoing message do not display on your screen.	Host cannot process the message at the rate you are sending. Try a lower baud rate or specify a delay (Delay option, Send Text dialog box) to cause Works to pause at the end of each line it sends.
Clusters of asterisks (*****) appear when someone is sending you text.	Try adjusting the Parity setting with the Options Communication command. If that does not help, line noise from a bad phone connection is probably causing parity errors. Try putting the call through again.
You are repeatedly disconnected.	Turn off call waiting feature. If line noise is causing loss of carrier signal, try putting the call through again.

Communications Error Messages

These are some of the error messages Works may display when you are using Communications:

Message	Meaning/Action
Can't access port.	Works cannot find the port (COM1 or COM2) that you have specified. This may be because the port does not exist on your system, or you have another device or program (such as a printer or printer driver) using it already. Try changing the COM port setting with the Options Communication command.
Port already in use.	The port you have specified for a Communications file is already being used by another active Communications file. Only one Communications file can be connected to a port at a time. You must disconnect the active Communications file before connecting another.

Message	Meaning/Action
Cannot connect.	Works was unable to find the Communications driver file called COMM.SCD. Make sure this file is in the same directory as the file WORKS.EXE.
Input overflow.	The host has sent text too fast for Works to process it, and some was lost. If the host can use XOn/XOff or Hardware Handshaking, make sure you have these options turned on. If host does not use handshaking, try connecting at a lower baud rate.
Output overflow.	Works is sending faster than the host computer can process the incoming text, and Works cannot send out more data until the host processes or acknowledges what it has been sent. This can also happen when you are using the Pause command. You can select Retry to start sending the text again, or cancel and try sending again at a slower baud rate, or use the Delay option of the Send Text command.
Parity error.	There is a mismatch between the host's type of parity and your parity setting. Adjust Parity setting with the Communications command on the Options menu.
Framing error.	There is a mismatch in baud rate, data bits, or stop bits between Works and the host. Try adjusting these settings with the Communication command on the Options menu. This message may occur when disconnecting; ignore it if this is the case.
Break signal received.	Host computer sent you a break signal. This may indicate that you are sending too fast for host to process. Either try a slower baud rate, or use the Delay option of the Send Text command.

Message	Meaning/Action
Waited too long for response.	Works is either waiting for the modem to respond to a command, or waiting for a response from the host during playback of a recorded sign-on sequence. Make sure your modem is connected, and switches are set so that it can send result codes to Works. If it is a sign-on problem, the host may not be responding.
Data not sent.	May occur when disconnecting or pausing communications. Means that Works was unable to transmit all the data it was sending at the time you disconnected; either due to a problem with the host, or because the Pause command was active when you disconnected.

Appendixes

Appendix D
Using a Mouse with Works

If you own a Microsoft Mouse, you can use it with Works. This appendix tells you how to:

- Perform basic mouse actions.
- Scroll a file.
- Choose commands from menus.
- Use dialog boxes.
- Move the cursor.
- Select text, cells, columns, and rows.
- Move splits.

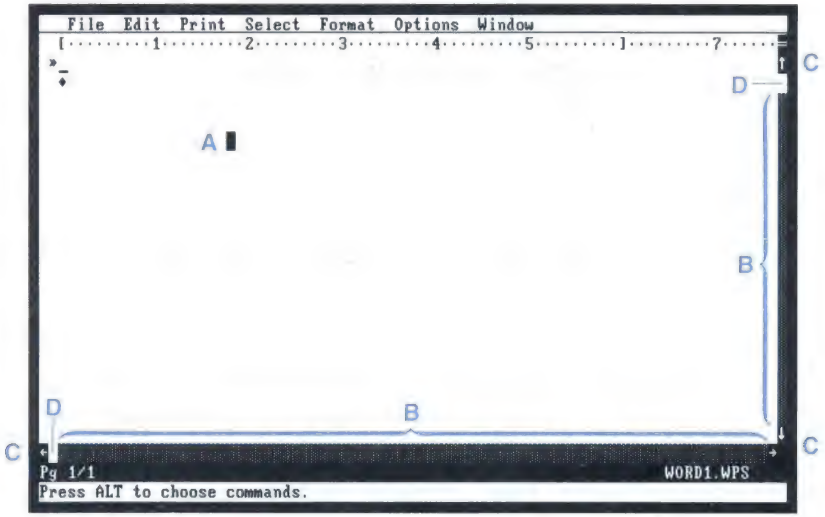
This appendix assumes that you are familiar with both the mouse and the basics of Microsoft Works.

Using Setup to Install Your Mouse Driver

To use a mouse with Works, you must first attach it to your computer following the instructions provided with your mouse. You then need to install the mouse software, called the mouse driver, on your DOS diskette or on your hard disk. You can use the Works Setup program to do this. For more information on the Setup program, see "Getting Started" in the Welcome to Microsoft Works section of the *Microsoft Works Reference*.

What You'll See When You Have a Mouse Installed

When you have a mouse driver installed, Works displays the mouse pointer and adds scroll bars to the Spreadsheet, Database, and Word Processor screens.



A Pointer
B Scroll Bars
C Scroll Arrows
D Scroll Box

Pointer The mouse pointer appears as a box. When you move the mouse, the pointer moves on the screen. You position the pointer on the text or area you want to work with.

Scroll Bars The scroll bars appear on the right side of the screen and across the bottom of the screen. You can use the scroll bars to move to different parts of your file.

Scroll Arrows The scroll arrows appear at each end of the scroll bars. You can use the scroll arrows to scroll by line, row, or column.

Scroll Box The scroll box is the box in the scroll bar. It indicates the approximate position in the file. You use the scroll box to scroll by larger amounts.

Mouse Skills

You use three mouse actions to do your work: positioning the pointer, clicking, and dragging. The procedures that follow this section tell you when to perform these actions.

To position the pointer

- Move the mouse until the pointer is over the desired position on the screen.

To click

1. Position the pointer over a character or in an area of the screen.
2. Without moving the mouse, press and release the mouse button.

To drag

1. Position the pointer over a character or in an area of the screen.
2. Without moving the mouse, press and hold the mouse button.
3. Move the pointer to the new location.
4. Release the mouse button.

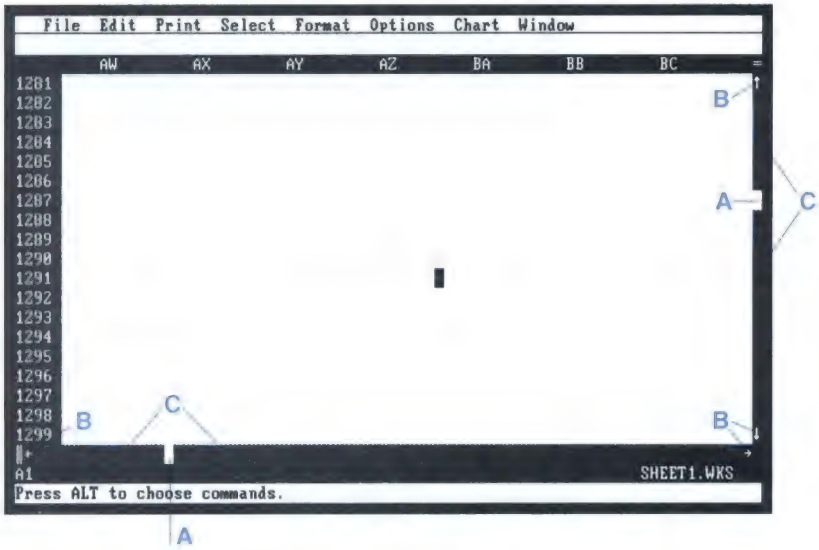
Using a Mouse with the Works Tools

In all procedures, use the left mouse button unless otherwise stated.

To scroll with scroll bars

In the following table, find the desired action in the left column; follow the instructions in the right column.

To scroll	Do this
Up by one line or row	Click the up scroll arrow.
Down by one line or row	Click the down scroll arrow.
Right by one column	Click the right scroll arrow.
Left by one column	Click the left scroll arrow.
To an approximate location in a file	Drag the scroll box to the approximate location in the scroll bar.
Up by one screen	Click above the scroll box on the vertical scroll bar.
Down by one screen	Click below the scroll box on the vertical scroll bar.
Right by one screen	Click to the right of the scroll box on the horizontal scroll bar.
Left by one screen	Click to the left of the scroll box on the horizontal scroll bar.



A Drag the scroll box to move through the file by an approximate amount.

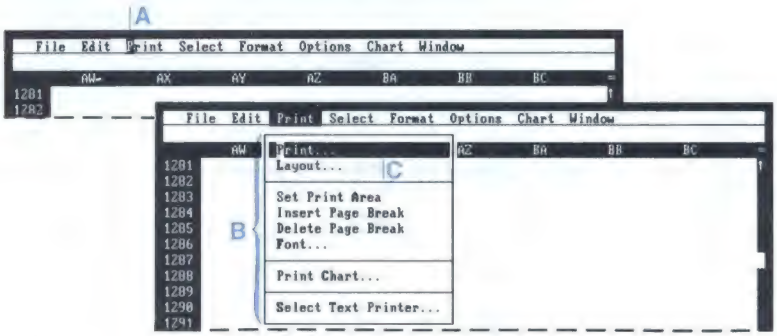
B Click the scroll arrows to move one line, row, or column.

C Click in the scroll bar to move one screen.

Tip You can scroll continuously by line, row, or column by positioning the pointer on a scroll arrow and holding down the mouse button.

To choose a command — for beginners (All tools)

1. Position the pointer on the menu name.
2. Click the mouse button.
   Works displays the menu.
3. Click the command you want to choose.
   Works executes the command.



A Position the pointer on the menu name.
B Click the mouse button. The menu appears.
C Click the command you want to choose.

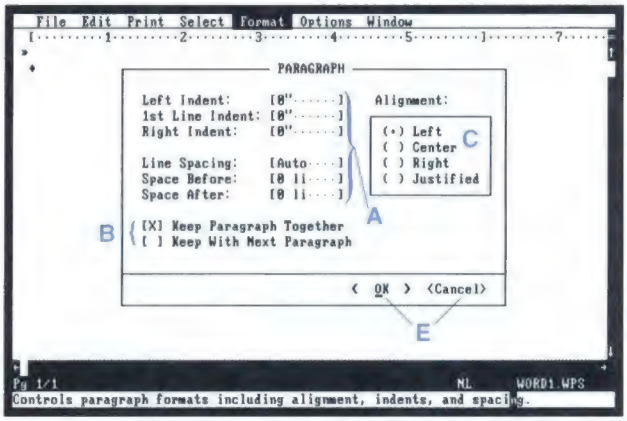
To choose a command — for experts
(All tools)

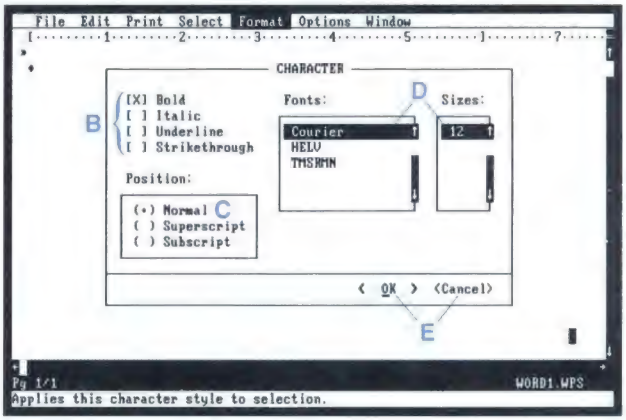
1. Position the pointer on the menu name.
2. Press and hold the mouse button.
   Works displays the menu.
3. Drag to the command you want.
4. Release the mouse button.
   Works executes the command.

To use a dialog box
(All tools)

In the table below, find the desired action in the left column; follow the instructions in the right column.

To	Do this
Move between items	Click the item you want to move to.
Turn a check box on or off	Click the check box.
Select an option from an option box	Click the option.
Select an item from a list box	Click the item.
Scroll a list box	Click the scroll arrows.
Type in a text box	Click in the text box and type.
Choose a button	Click the button.





A Click in a text box.
B Click check boxes to turn them off or on.
C Click option buttons to select one option from a group.
D Click an item in a list to select the item.
E Click buttons to carry out or cancel a command.

Tip In a dialog box, you can select an item from a list box and choose OK in one step by double-clicking. Position the pointer on the item in the list. Click the left mouse button quickly two times.

To move the cursor or highlight
(All tools)

1. Position the pointer where you want to move the cursor.
2. Click the mouse button.

To select text
(All tools)

These techniques apply to text in the Word Processor, text in text boxes in a dialog box, and text in the formula bar in the Spreadsheet or Database.

In the table below, find the desired action in the left column; follow the instructions in the right column.

To select	Do this
One character	Drag over the character.
Any amount of text	Position the pointer on the first character. Drag to one character past the last character of the selection. Release the mouse button.

To select text
(Word Processor)

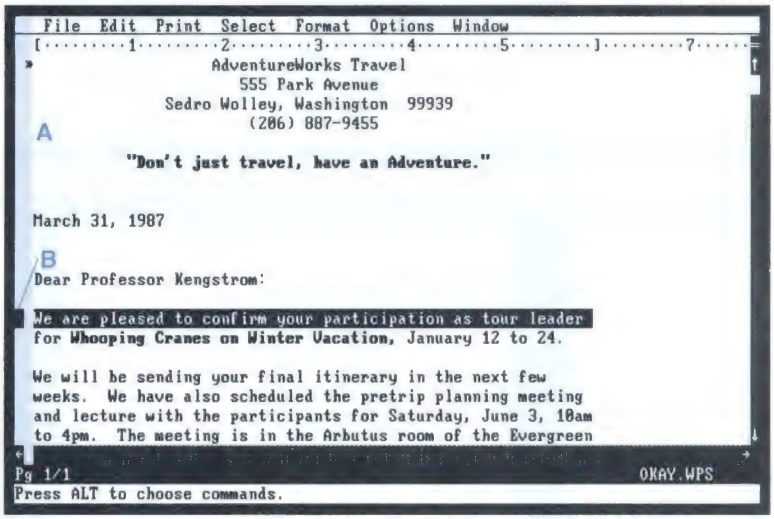
In addition to the techniques above, there are other ways to select text in a Word Processor file.

In the table below, find the desired action in the left column; follow the instructions in the right column.

To select	Do this
One word	Position the pointer on the word. Click the right mouse button.
One sentence	Position the pointer anywhere in the sentence. Click both mouse buttons at the same time.
One line	Click the left mouse button in the selection bar to the left of the line.
One paragraph	Click the right mouse button in the selection bar to the left of the paragraph.

To select	Do this
Entire file	Click both mouse buttons in the selection bar.
Any amount of text: method 1	Click the first character. Press F8. Click the last character of the selection.
Any amount of text: method 2	Click the first character. Press and hold SHIFT. Click the last character of the selection.

To extend a selection, press and hold SHIFT, or press F8. Click at the new end of the selection.


File Edit Print Select Format Options Window
AdventureWorks Travel
555 Park Avenue
Sedro Wolley, Washington 99939
(206) 887-9455
A
"Don't just travel, have an Adventure."
March 31, 1987
B
Dear Professor Kengstrom:
We are pleased to confirm your participation as tour leader for Whooping Cranes on Winter Vacation, January 12 to 24.
We will be sending your final itinerary in the next few weeks. We have also scheduled the pretrip planning meeting and lecture with the participants for Saturday, June 3, 10am to 4pm. The meeting is in the Arbutus room of the Evergreen
Pg 1/1
OKAY.WPS
Press ALT to choose commands.

A Selection bar
B Pointer in selection bar

To select cells, columns, and rows (Spreadsheet and Database)

These techniques apply only to the Spreadsheet and Database. In the following table, find the desired action in the left column; follow the instructions in the right column.

To select	Do this
One cell	Click the cell.
More than one cell	Click the first cell. Press F8, or press and hold SHIFT. Click the last cell.
One entire column	Click the column header.
More than one column	Click the first column header. Press F8, or press and hold SHIFT. Click the last column header.
One entire row	Click the row header.
More than one row	Click the first row header. Press F8, or press and hold SHIFT. Click the last row header.
Entire file (all cells)	Click the upper-left intersection of the row and column header.

D
B
File Edit Print Select Format Options Chart Window
A B C D E F G
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A
C
B6
SHEET1.WKS
Press ALT to choose commands.

A Click in the work area to select a cell.
B Click in the column header to select a column.
C Click in the row header to select a row.
D Click here to select all cells.

To unselect
(All tools)

1. Click anywhere in the file.
2. If you have used the F8 key to select, press ESCAPE.

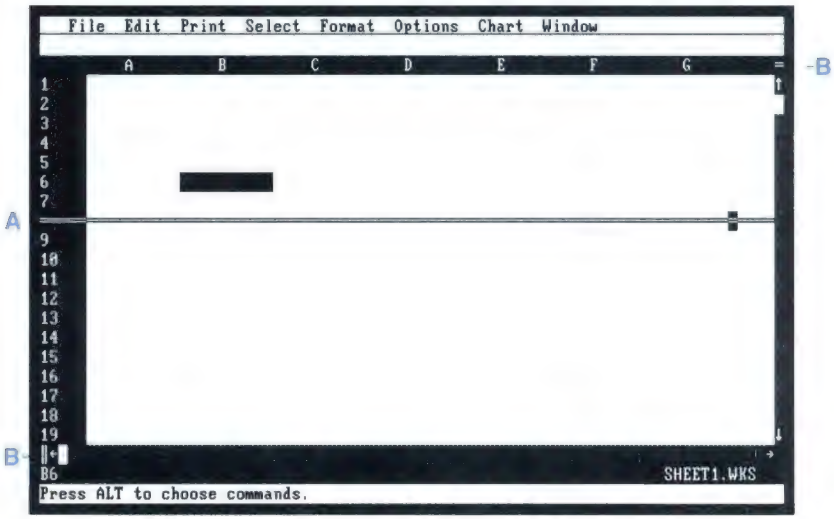
The previous selection collapses. What you've clicked is now selected.

To move splits
(All tools)

1. Position the pointer on the split symbol.
2. Press and hold the mouse button.
3. Drag the split to the new location.

To reposition a split, position the pointer on the split. Drag the split to the new location.

To remove the split from the screen, move the horizontal split to the top of the screen and the vertical split to the left side of the screen.


File Edit Print Select Format Options Chart Window
A B C D E F G
1 2 3 4 5 6 7 9 10 11 12 13 14 15 16 17 18 19
A
B
B
B6
SHEET1.WKS
Press ALT to choose commands.

A Split
B Split symbols. Drag from here to position a split.

Appendix E
Using Works with Other Applications

This appendix describes how to use files created by other applications with Works, and how to save Works files in formats you can use with other applications.

It includes information on:

- Using Lotus 1-2-3 files with Works.
- Saving Works Database and Spreadsheet files in a format other applications can use.
- Saving Word Processor files in formats other word processing programs can use.

Using Lotus 1-2-3 Files

You can use your Lotus 1-2-3 (version 1 or 2) spreadsheet files in Works, and your Works spreadsheets in Lotus 1-2-3, without having to run a conversion program. Works spreadsheet files, and their charts, are stored in the .WKS file format used by Lotus 1-2-3 (version 1 or 2).

The Works Spreadsheet and 1-2-3 are not identical. Works supports some features not found in 1-2-3, and 1-2-3 supports some not found in Works, while some features are supported in both programs in different ways. Consequently, there may be some loss of information if you create a file in one program, open it in the other and save it, and then open it in the first program again. But the most important parts of a spreadsheet, namely the values, formulas, formats, and range names, are preserved.

The only exceptions to this are that the Works Spreadsheet does not support the 1-2-3 Version 2 string combination operator (&) and the following 1-2-3 Version 2 functions:

- Logical functions: @ISNUMBER, @ISSTRING
- Special functions: @@, @CELL, @CELLPOINTER
- Date and Time functions: @DATEVALUE, @TIMEVALUE
- String functions
- Database statistical functions

In Works, if you try to open a Lotus 1-2-3 Version 2 file containing formulas that use these functions, only the values of these formulas are read. The formulas themselves are not read.

Using Works with Other Databases and Spreadsheets

With Works you can save Spreadsheet and Database files in Text format (also known as ASCII format). When you save Works files in Text format, Works removes the formatting codes and formulas, leaving just the values as they appear in the cells. Since most database programs (including dBase III) and many spreadsheet programs can read files saved in Text format, you can load the Works Text format files directly into other database and spreadsheet programs.

If you have database and spreadsheet files created with other products that you want to use with Works, you can do so if the other program can create a text format version of the file. You open the text format version of the file from the other program as a Works Database or Spreadsheet file.

To save a Works Spreadsheet or Database in Text format

1. From the File menu, choose Save As.
2. In the Save As dialog box, select Text.
3. In the File Name text box, type a name for the Text version of the file.

Then open the resulting file in the other application, following the procedures for that application.

When you save a Works Spreadsheet or Database using Text format, the cell contents are saved in the resulting text file as they are displayed on the screen. For example, if you have entered the number 3 in a cell which is formatted in Dollar format with 2 decimals, then $3.00 is displayed in the cell and saved in the file. If the display of $3.00 is the result of a formula, such as =1+2, "$3.00," not the formula, is saved, because that is what is displayed in the cell.

In Text format, the cell contents are separated by commas, and rows or records are separated by carriage returns (CR) and line feeds (LF). Labels, error values, and numbers in Dollar, Percent, or Time/Date format are enclosed in double quotation marks. Numbers in General, Fixed, Exponential, or Logical format are not. (This is because most database programs, including dBase III, read and write in numbers only in General, Fixed, Exponential, or Logical format.) Spreadsheet column labels and database field names are not saved.

To open a spreadsheet or database file from another application

1. Save the file from the other application as a text file, following the procedure for saving a text file with that application. Exit from the application.

2. Start Works and choose Open from the File menu.
3. Type in or select the name of the text file you created with the other application, and press ENTER.
4. From the Open As dialog box, select the type of file (Spreadsheet or Database) you want to open the file as in Works.

When opening a text file, Works assumes that the first line of the file contains the first row or record, and not column labels or field names.

Using Works with Other Word Processors

Works provides you with the option to save Word Processor files in two formats (Plain and Text) that you may be able to use with other word processors or programs.

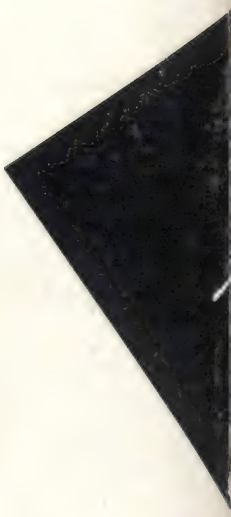
In Text format, Works saves the file as a text (ASCII) file without any formatting information. Note that the text has carriage returns (CR) and line feeds (LF) only at the end of each paragraph, not at the end of each line. This format is good for word processing programs that have a wordwrap feature. Some word processor programs expect carriage returns and line feeds at the end of each line within a paragraph; use Plain format when saving Works Word Processor files for use with these programs.

In Plain format, Works also saves the file as a text (ASCII) file without any formatting information. Carriage returns and line feeds are inserted after each line, not just after each paragraph. Also, the left and right margins and tabs are converted into spaces, while the top and bottom margins are converted into blank lines, as if you were printing the file. If you don't want the spaces and blank lines to appear in your file, set your margins to 0 with the Layout command on the Print menu before saving in Plain format.

Plain format, with margins set to 0, is generally the best format to save files in when you are using the Works Word Processor to create messages to send out via the Communications tool with the Send Text command.

Microsoft Corporation
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

Microsoft®



0288 Part No. 02095

100% money-back guarantee.

Because we believe so strongly that Microsoft® Works is for everyone, we're offering to refund the full price if you don't feel the same way.

Return it to your dealer within 30 days.

Your Microsoft dealer stands behind Microsoft Works with this money-back guarantee. If, for any reason, you feel that Microsoft Works isn't what you expected, return it within 30 days to your dealer for a full refund.

Some simple requirements.

Follow these simple instructions, and your Microsoft dealer can refund your money:

- SAVE your dated, itemized sales receipt.
- SAVE the complete Microsoft Works package, including:
  - 8 disks (3½-inch version) and 4 disks (5¼-inch version)
  - Registration card
  - *Microsoft Works Keyboard Guide*
  - Keyboard template
  - *Microsoft Works Reference*
  - *SampleWorks*
  - *Appendixes to Microsoft Works and MS-Key Macros Reference*
  - This guarantee card
- DO NOT mail in the registration card.

Restrictions.

This guarantee is offered through January 31, 1988 for Microsoft Works for IBM® Personal Computers and compatibles and for the IBM Personal System/2™ series. This offer is good only at participating dealerships while supplies last.

How to get your refund.

We're sorry you've decided to return your new Microsoft Works. We'd like to make the process as simple as possible. We'd also like to know why you were dissatisfied with the product so we can continue to improve it.

To get your refund, complete this form and return it with the complete package (see the other side of this card) and your dated, itemized sales receipt (original or photocopy). You must return Microsoft Works to the dealer from whom you obtained it within 30 days of the date of acquisition.

(Please type or print clearly)

Name

Address (include company name, mailstop, and apartment or suite number, if applicable)

City State Zip

Work phone Home phone

Reason for return

I certify that I have not copied the Microsoft Works software and am returning the complete package as described on the other side of this card.

Customer signature

This offer is valid only in the USA.

Microsoft and the Microsoft logo are registered trademarks of Microsoft Corporation.

0987 Part No. 00536

Microsoft

Repair/Replacement Order Card

To order repair or replacement for a defective Microsoft product, please follow the instructions on the right before filling out this card. After calling Microsoft Customer Service, mail the following three items together to the address below: 1) This card. 2) The defective component. 3) A photocopy of dated proof-of-purchase, such as your sales receipt. *A product returned without proof-of-purchase is not eligible for warranty service.*

Please print all information and be sure to fill out the entire card.

Last name First Middle initial

Company name *(if applicable)*

Division Mail stop

Street address

City State Zip

( )
Daytime telephone Telex

Return authorization number

Product number on disk

Name of product as it appears on manual cover

/ /
Date of product purchase *(Month)* *(Day)* *(Year)*

In accordance with the Limited Warranty on this product, Microsoft will, at its option, determine whether the defective product will be repaired or replaced. If the product warranty has expired, or if the product does not qualify for warranty service, you will be charged a service fee. No out-of-warranty service will be performed prior to receipt of payment. You may call Microsoft Customer Service at (206) 882-8088 to inquire about the current charge for the service required.

Mail to:
Customer Service Department
Product Returns
13221 SE 26th Street
Bellevue, WA 98005

Valid only in the United States. In other countries, please contact your dealer or your local Microsoft office for repair/replacement information.

Microsoft Corporation
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

Microsoft and the Microsoft logo are
registered trademarks of Microsoft Corporation.

0387 Part No. 999-999-708

Get your name on the record! Send in your registration card today.

At Microsoft, we're always looking for ways to make our current products even better. Such as by adding new features. Or by adding support for new hardware.

As a registered Microsoft customer, you'll be in a better position to hear about product improvements like these. What's more, you'll also be eligible to receive special update pricing for your product.

There's a simple way to be sure you get all that information—just send in your registration card. If you don't, we won't know how to reach you. And you might lose out on the chance to get a valuable update at some point in the future.

So it's important we get your registration card right away. Please take a few moments RIGHT NOW to fill it out and drop it in the mail.

An important reason to register: The Microsoft commitment to support.

When you select from Microsoft, you're choosing more than just a great product—you're also choosing a company that believes in providing great support to customers.

As a registered Microsoft customer, you'll know you're getting the best-possible support that's available to you.

That support starts with an active program of providing customers with valuable product update information. So you can keep the state of your product up to the state of our art.

What's more, you'll be able to phone our easy-to-reach product support representatives with your technical questions. And you can also take advantage of our product repair/replacement plan should you ever need it.

Microsoft support. It's an important part of what you get with products from Microsoft.

Guide to Microsoft support services.

Here's how to take advantage of Microsoft's phone-in and product repair/replacement services. To ensure you get the full benefit of both services, please follow all instructions carefully.

Microsoft telephone support.

We want you to get the maximum performance from your Microsoft product. So if you run into technical difficulties, we'll be happy to help.

But often, you'll find that a lot of problems are already answered in your product documentation. With answers that are a lot more detailed than you could ever get over the phone.

So check your documentation first. Give your dealer a call. Then, if you're still puzzled, gather all the information that applies to your problem and, *with your manual and product disks close at hand,* call our Product Support staff at (206) 882-8089. They'll be ready to give you the support to get the most from your Microsoft product.

Microsoft product repair/replacement plan.

Because of Microsoft's high quality-control standards and rigorous testing, most of our customers never need to use our repair/replacement service. But if a Microsoft product ever does prove defective, it will be repaired or replaced at no charge during the warranty period, and for a reduced price thereafter. *Please review your license agreement or warranty completely for detailed information about what is covered.*

Follow these steps if you think you have a defective product:

1. Collect all the information you can about the problem. Make notes about any on-screen messages you get when the problem occurs.

2. With your manual and product close at hand, call our Product Support staff at (206) 882-8089. In some cases, your question can be answered right away.

3. If your product is diagnosed as defective, the Product Support representative will refer you to our Customer Service department. A Customer Service representative will issue you a return authorization number to be included on the product repair/replacement card.

4. Put that card, the defective component, a photocopy of your proof-of-purchase, and full details about the problem in a protected envelope or box, and mail it all together to the address listed on the card.

Microsoft® Works

Keyboard Guide

Microsoft®

Microsoft Works Keyboard Guide

The following tables show what keys to press to perform various tasks with Works. For some tasks you use key combinations, pressing the first key, then pressing the next key. These key combinations are shown like this: SHIFT + F3. Many of the keys you press are shortcut keys for commands on the menu. Shortcut keys are listed with the command topic in your *Microsoft Works Reference*.

Basic Skills

To choose a command

1. Press ALT, then press the bold letter in the menu name.
2. Press the bold letter in the command name.

To use a dialog box

- Hold down ALT, then press the bold letter of the option you want.
- Type text in a text box.
- Use the UP and DOWN keys to select an item from a list box.
- Press ENTER to choose the OK button and carry out a command.
- Press ESCAPE to choose the Cancel button.
- Press ALT, then press the bold letter to choose any other button.

Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Move	F3
Copy	SHIFT + F3
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Shrink selection	SHIFT + F8
Paginate Now	F9

Movement and Selecting Keys

To move around a file or to move the cursor, press the appropriate movement keys. To select text and extend the selection, move to the text you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys.

To move	Press
Left one character	LEFT
Right one character	RIGHT
Up one line	UP
Down one line	DOWN
Left one word	CONTROL + LEFT
Right one word	CONTROL + RIGHT
Up one paragraph	CONTROL + UP
Down one paragraph	CONTROL + DOWN
To beginning of line	HOME
To end of line	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Up one screen	PAGE UP
Down one screen	PAGE DOWN
To beginning of screen	CONTROL + PAGE UP
To end of screen	CONTROL + PAGE DOWN
Start EXTEND	F8
Quit EXTEND	ESCAPE
Extend selection	F8
Shrink selection	SHIFT + F8
Cancel selection	Any movement key

Character Formatting Keys

For this format	Press
Bold	CONTROL + B
Underline	CONTROL + U
Italic	CONTROL + I
Strikethrough	CONTROL + S
Superscript	CONTROL + SHIFT + =
Subscript	CONTROL + =
Plain text	CONTROL + SPACEBAR

Paragraph Formatting Keys

For this format	Press
Left alignment	CONTROL + L
Right alignment	CONTROL + R
Center alignment	CONTROL + C
Justified alignment	CONTROL + J
Nested indent	CONTROL + N
Unnest indent	CONTROL + M
Hanging indent	CONTROL + H
Unhang indent	CONTROL + G
Single space	CONTROL + 1
Double space	CONTROL + 2
1 ½ space	CONTROL + 5
1 line before paragraph	CONTROL + O
0 lines before paragraph	CONTROL + E
Normal paragraph	CONTROL + X

Editing Keys

To	Press
Delete character left	BACKSPACE
Delete character or selection	DELETE
Move	F3
Copy	SHIFT + F3
Undo	ALT + BACKSPACE

Special Word Processor Keys

To insert	Press
Tab mark	TAB
Paragraph mark	ENTER
End-of-line mark	SHIFT + ENTER
Manual page break	CONTROL + ENTER
Optional hyphen	CONTROL + -
Non-breaking hyphen	CONTROL + SHIFT + -
Non-breaking space	CONTROL + SHIFT + SPACEBAR
Print page number	CONTROL + P
Print date	CONTROL + D
Print time	CONTROL + T
Print filename	CONTROL + F
Current date	CONTROL + ;
Current time	CONTROL + SHIFT + ;

Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Reference	F4
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8
Select row	CONTROL + F8
Select column	SHIFT + F8
Select spreadsheet	SHIFT + CONTROL + F8
Calculate Now	F9
Exit Charting	F10
View Chart	SHIFT + F10

Movement and Selecting Keys

To move around a file or to move the cursor or the highlight, press the appropriate movement keys. To select cells and extend the selection, move to the cell(s) you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys. To collapse a selection, press ESCAPE.

To move	Press
Left one cell	LEFT
Right one cell	RIGHT
Up one cell	UP
Down one cell	DOWN
Left one cell in range	SHIFT + TAB
Right one cell in range	TAB
Up one cell in range	SHIFT + ENTER
Down one cell in range	ENTER
Next unlocked cell	TAB
One block left	CONTROL + LEFT
One block right	CONTROL + RIGHT
One block up	CONTROL + UP
One block down	CONTROL + DOWN
One screen left	CONTROL + PAGE UP
One screen right	CONTROL + PAGE DOWN
One screen up	PAGE UP
One screen down	PAGE DOWN
To beginning of row	HOME
To end of row	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Quit EXTEND/Collapse selection	ESCAPE

To select	Press
Range	SHIFT + movement keys, or F8, then movement keys
Column	SHIFT + F8
Row	CONTROL + F8
Entire spreadsheet	SHIFT + CONTROL + F8

Special Spreadsheet Keys

To	Press
Enter into a range	CONTROL + ENTER
Copy cell above	CONTROL + '
Enter current date	CONTROL + :
Enter current time	SHIFT + CONTROL + :

The Database and Reporting

List and Report Screen Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Next window	F6
Previous window	SHIFT + F6
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Extend selection	F8

Name	Press
Select row	CONTROL + F8
Select column	SHIFT + F8
Select database	SHIFT + CONTROL + F8
Switch between Form/List	F9
Exit Reporting	F10
View Report	SHIFT + F10

Form Screen Function Keys

Name	Press
Help	F1
Tutorial	SHIFT + F1
Edit	F2
Move	F3
Copy	SHIFT + F3
Go To	F5
Repeat Search	F7
Repeat Copy or Format command	SHIFT + F7
Switch between Form/List	F9
Exit Reporting	F10
View Report	SHIFT + F10

To move around a file or to move the highlight, press the appropriate movement keys. To select cells and extend the selection, move to the cell you want to select, press F8, then press the appropriate movement keys; or, press SHIFT plus the appropriate movement keys. To collapse a selection, press ESCAPE.

List and Report Screen Movement and Selecting Keys

To move	Press
Left one cell	LEFT
Right one cell	RIGHT
Up one cell	UP
Down one cell	DOWN
Left one cell in range	SHIFT + TAB
Right one cell in range	TAB
Up one cell in range	SHIFT + ENTER
Down one cell in range	ENTER
One block left	CONTROL + LEFT
One block right	CONTROL + RIGHT
One block up	CONTROL + UP
One block down	CONTROL + DOWN
One screen left	CONTROL + PAGE UP
One screen right	CONTROL + PAGE DOWN
One screen up	PAGE UP
One screen down	PAGE DOWN
To beginning of record	HOME
To end of record	END
To beginning of file	CONTROL + HOME
To end of file	CONTROL + END
Collapse a selection	ESCAPE

Form Design Screen Movement Keys

To move	Press
Left	LEFT
Right	RIGHT
Up one line	UP
Down one line	DOWN
To beginning of line	HOME
To end of line	END
Next screen	PAGE DOWN
Previous screen	PAGE UP
To beginning of form	CONTROL + HOME
To end of form	CONTROL + END

Form and Query Screen Movement and Selecting Keys

To move to	Press
Previous cell	LEFT or UP
Next cell	RIGHT or DOWN
Previous screen	PAGE UP
Next screen	PAGE DOWN
Previous record	CONTROL + PAGE UP
Next record	CONTROL + PAGE DOWN
Beginning of database	CONTROL + HOME
End of database	CONTROL + END

Special Database Keys

To	Press
Copy cell previous record	CONTROL + '
Enter current date	CONTROL + ;
Enter current time	SHIFT + CONTROL + ;

© Copyright Microsoft Corporation, 1987. All rights reserved.
Published simultaneously in the US and Canada.

Microsoft® and the Microsoft logo are registered trademarks of Microsoft Corporation.

Document No. 990070005-100-R00-0987

Microsoft Corporation
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

Microsoft®

0987 Part No. 09156

Microsoft Works Additional Information and Network Administrator's Guide

The first part of this documentation describes the new features and improved performance in Microsoft Works Version 1.05. The second part contains the Network Adminstrator's Guide for Microsoft Works Version 1.05.

Additional Information

Network Support

Works Version 1.05 allows several users to share Works on a network. It lets multiple users look at the same files at the same time while preventing them from accidentally overwriting each other's files.

For information on setting up and using Works on a network, see the Network Administrator's Guide later in this document.

Dialog Box Buttons

In Works Version 1.0, choosing a button in a dialog box almost always "dismisses" the dialog box, removing it from your screen and returning you to the active file. In Works Version 1.05, several buttons have been changed so that they leave the dialog box on the screen, allowing you to make several changes at once.

For example, in the Tabs dialog box in the Works Version 1.0 Word Processor, choosing the Set button sets the specified tab stop, dismisses the dialog box, and returns you to the Word Processor file. If you then want to set another tab stop, you have to choose the Tabs command again.

In Works Version 1.05, the Set button leaves the dialog box on the screen so that you can set several tab stops at once. Similarly, the Clear button lets you clear several tab stops at once. When you are finished setting and/or clearing tab stops, press ESCAPE or choose the Cancel button to dismiss the dialog box. Note that this does not undo the changes you have already made with the Set and/or Clear buttons.

The buttons listed after the following commands in Works Version 1.05 will now leave dialog boxes on the screen after you choose them:

Tabs command (Word Processor) Set, Change, Clear, and Clear All buttons

Note: The new Tabs command is explained in detail below.

Name command (Spreadsheet) Delete button

This allows you to delete several names at once.

Charts command (Spreadsheet) Rename, Delete, and Copy buttons

This allows you to rename, delete, or copy several charts at once.

Reports command (Database) Rename, Delete, and Copy buttons

This allows you to rename, delete, or copy several reports at once.

Data Format command (Chart screen) Format and Format All buttons

This allows you to format several series or slices at once.

Legends command (Chart screen) Create button

The Create button, called the OK button in Works Version 1.0, allows you to create legends for several series at once.

Series and Data Label commands (Chart screen) Delete button

This allows you to delete several data series or data label series at once.

Tabs Command

A Tabs list box and a Change button have been added to the Tabs dialog box in the Works Version 1.05 Word Processor.

The Tabs list box lists the positions of the existing tab stops for the first paragraph of your selection. It also lists the default tab stop position. When you select a tab stop in the list box, its position, alignment, and leader character are displayed elsewhere in the dialog box. As you scroll through the list box, you can view the properties of each tab stop.

To clear a tab stop using the list box

1. In the Tabs list box, select the tab stop.
2. Choose the Clear button.

To change a tab

The Change button lets you change the position, alignment, or leader character of a tab stop.

1. In the Tabs list box, select the tab stop.

   If you want to change the position, alignment, or leader character of the default tab stop, select Default in the list box.

2. In the Position text box, type the new position of the tab stop.

   If you do not want to move the tab stop, leave the text box unchanged.

3. Under Alignment and Leader, select the new alignment and leader character of the tab stop.

   If you do not want to change the alignment or leader character, leave these options unchanged.

4. Choose the Change button.

In Works Version 1.0, the Position text box was the first item in the Tabs dialog box, whereas in Version 1.05 the Tabs list box is first. So to set a new tab stop you will have to move to the Position text box before you can type the position of the new tab stop.

As mentioned previously, the Set, Change, Clear, and Clear All buttons all leave the Tabs dialog box on the screen so you can set, change, and clear several tab stops at once. When you are finished, press ESCAPE or choose the Cancel button to dismiss the dialog box. Note that this does not undo the changes you have already made with the other buttons.

Check Spelling Command

Two new buttons, Change All and Ignore All, have been added to the Check Spelling dialog box in the Works Version 1.05 Word Processor.

The Change All button functions like the Change button except that it replaces not only the selected misspelling but also all further occurrences of the same misspelling. Similarly, the Ignore All button tells Works to ignore all further occurrences of a misspelling, not just the selected one.

Insert and Delete Commands

In Works Version 1.0, to insert or delete rows, columns, or page breaks in the Spreadsheet or in the Database List or Report screens, you must first select an entire row or entire column. Otherwise, the Insert, Delete, Insert Page Break, or Delete Page Break commands are not available.

In Works Version 1.05, if your selection is not an entire row or column, the Insert and Delete commands display a dialog box asking you whether you want to insert or delete a row or a column.

Similarly, the Insert Page Break and Delete Page Break commands ask you whether you want to insert or delete a page break between rows or columns. If the first row and column of the selection already contain page breaks, there is no need to insert a page break, and the Insert Page Break command is not available. If the selection contains no page breaks, there is nothing to delete, and the Delete Page Break command is not available.

Additional Printer Support

Works Version 1.05 allows you to print text and charts on several printers not supported in Version 1.0, including many PostScript devices. The SETUP program lists the new printers supported.

Note that some of the newly supported printers require initialization files, which have the filename extension .INI, in addition to the text printer driver files, which have the extension .PRD. Use the SETUP program to copy the information for a printer to your working copy of the Works Program disk or the Works directory on your hard disk. SETUP will copy both the printer driver and any necessary initialization file.

Also, in Version 1.0, the text and chart printer drivers for the Hewlett-Packard ThinkJet printer used two different printer modes. This required that you change a dip switch on your printer when you changed between printing text and charts. Version 1.05 contains a new chart driver (THINKJET.GPD) that uses the same printer mode as the text driver. This allows you to print both text and charts, including charts within word processor files. Use the SETUP program to copy the new ThinkJet chart driver from the Works Printer Disk 2 to your working copy of the Works Program disk or the Works directory on your hard disk.

Additional Screen Driver

Works Version 1.05 can now display charts on a Monochrome Display connected to an Enhanced Graphics Adapter (EGA). The SETUP program includes a new option for this combination of video card and monitor.

Network Administrator's Guide

The network version of Microsoft Works 1.05 lets several users share Works on a network. In most cases, they can use the network version of Works as they would the standard version of Works. However, the network version has the advantage of allowing more than one user to use the same copy of Works. And Works prevents multiple users from accidentally overwriting each other's files.

The network should already be installed and operational when you set up Works.

Note To comply with the license agreement for Microsoft Works, you must supply each workstation on the network with a Microsoft Works manual and license, available as the Microsoft Works Workstation User Manual Pack.

Setting Up Works

When Works is run on a network, the directory in which Works is located is referred to as the "program directory." The program directory is always on the file server, which is the computer storing the network resources.

The directory the user specifies when starting Works on a network is the user directory. Users can create files at their own workstations or on the file server itself. If users work on the file server, they should still work in their own user directories on the file server; they should never work in the Works program directory.

To set up Works in the program directory on the file server

1. Make working copies of the Works Program disk, Spell/Help disk, Setup/Utility disk, Printer Disks 1 and 2, and all Learning Microsoft Works disks with the DOS DISKCOPY command. Store the original disks in a safe place and use the working copies from now on.
2. Use the DOS COPY command to copy the following files from the Works Program and Spell/Help disks to the program directory:

WORKS.EXE	COMM.SCD
MAIN.DIC	SPELL.OVL
HELP.OVL	WORKS.HLP

3. Use the DOS COPY command to copy all files with the extension .GSD from the Works Setup/Utility disk to the program directory.
4. Use the DOS COPY command to copy the following files from the Learning Microsoft Works disks to the program directory:

LEARN.COM	WK.PGM
WORKSONE.CTX	WORKSONE.SCN
WORKSONE.SOB	WORKSTWO.CTX
WORKSTWO.SCN	WORKSTWO.SOB
WORKSTHR.CTX	WORKSTHR.SCN
WORKSTHR.SOB	

(The LEARN.COM and WK.PGM files are contained on all of the Learning Microsoft Works disks, but you need copy each file only once.)

5. Use the DOS COPY command to copy all files with .SFT and .RFT extensions from the Works Printer Disk 2 to the program directory.
6. Put the Setup/Utilities Disk in drive A of your file server. Make drive A the current directory. Type *setup* and press ENTER.
7. Use the Setup Program's Modify option to add the text and chart printer drivers for all of your network's printers to the program directory.
8. Use the DOS ATTRIB command to make the following program directory files read-only:

WORKS.EXE	MAIN.DIC
SPELL.OVL	WORKS.HLP
HELP.OVL	DOWNLOAD.OVL
*.SFT	*.RFT
*.PRD	*.GPD
*.INI	*.GSD
LEARN.COM	WK.PGM
WORKSONE.CTX	WORKSONE.SCN
WORKSONE.SOB	WORKSTWO.CTX
WORKSTWO.SCN	WORKSTWO.SOB
WORKSTHR.CTX	WORKSTHR.SCN
WORKSTHR.SOB	COMM.SCD

To set up Works in the user directory

- Use the DOS PATH command to put the Works program directory in the path of all Works users' AUTOEXEC.BAT files.

To set up Works if users always use the same workstation

When a user always uses the same workstation, the user directory can be on either the workstation or the file server.

- Use the DOS COPY command to copy the appropriate screen driver file from the Works Setup/Utility Disk to each user's directory. Rename the copied screen driver SCREEN.GSD. Screen drivers and their matching monitor/video types are as follows:

Screen driver	Video type
EGA.GSD	EGA video card and monitor
CGA.GSD	CGA video card and monitor
VGA.GSD	IBM PS/2 Models 50, 60, and 80
MCGA.GSD	IBM PS/2 Models 25 and 30
HERCULES.GSD	Hercules video cards
OLIVETTI.GSD	Olivetti and AT&T computers
ERICSSON.GSD	Ericsson computers
AMSTRAD.GSD	Amstrad computers
TANDY.GSD	Tandy Model 1000 computers

If Users Use Different Workstations

When a user uses different workstations, the user directory should be on the file server.

Using Works on a Network

Important Users should be told to start Works either from their own user directory or from the Works program directory, specifying their user directory with the /N flag.

Using the /N Flag

Whenever Works is used on a network, the /N flag should be used. The /N flag tells Works where the user's user directory is. The format of the /N flag is:

```
works /n path
```

where PATH is the path of the user's user directory.

Using the /G Flag

Whenever Works is used on a network where users do not always use the same workstation, the /G flag should also be used. The /G flag tells Works what kind of monitor the user is currently using. The format of the /G flag is:

```
works /n path /g screen_driver
```

where SCREEN_DRIVER is the screen driver for the monitor at the workstation that the user is currently using. Screen drivers and their matching monitor/video types are as follows:

Screen driver	Video type
EGA.GSD	EGA video card and monitor
CGA.GSD	CGA video card and monitor
VGA.GSD	IBM PS/2 Models 50, 60, and 80
MCGA.GSD	IBM PS/2 Models 25 and 30
HERCULES.GSD	Hercules video cards
OLIVETTI.GSD	Olivetti and AT&T computers
ERICSSON.GSD	Ericsson computers
AMSTRAD.GSD	Amstrad computers
TANDY.GSD	Tandy Model 1000 computers

Using Batch Files

You can set up batch files for each user in the workstation root directories. These batch files simplify starting Works because the user doesn't have to remember how to use the /N and /G flags.

The format of the command lines of the batch file should be:

```
works /n path /g screen_driver
cd c:\
```

Using Read-Only Files

When users open a file and turn on the Read Only check box, they can view the file and save it under a different filename, but they cannot modify the data in the original file. The advantage of opening a file read-only is that more than one user can look at and use the data simultaneously.

When users open a file and leave the Read Only check box turned off (this is the default setting), they can also modify the original data in the file. But only one user can use that file while it is open.

Spreadsheet, database, and communications files that have been opened read-only can still be opened read-write. After they have been opened read-write, however, nobody else can read them. By contrast, when you open a word processing file read-only, other users cannot open it read-write. When a word processing file is opened read-write, nobody else can read it—as with spreadsheet, database, and communications files.

To designate a file read-only

You can designate Works files read-only using the DOS ATTRIB command, or a user can designate a file read-only when opening the file from inside Works. To designate a file read-only when opening it, the user:

1. Opens the File menu.
2. Chooses the Open command.
3. Selects the file to be opened read-only.
4. Turns on the Read Only check box.
5. Presses ESCAPE to choose the OK button.

Using the Personal and Main Dictionaries

Works looks for and keeps the personal dictionary files, all called PERSONAL.DIC, in the user directories. If more than one person wants to use the same personal dictionary, you must make it read-only with the DOS ATTRIB command.

The main dictionary MAIN.DIC can be opened simultaneously by as many users as need it.

Example

This is an example of how Works might be set up and used on a network.

The network has two workstations, named Workstation 1 and Workstation 2. There are four users, named User 1, User 2, User 3, and User 4. Users take whatever workstation is available. Workstation 1 has a CGA video card and monitor, and Workstation 2 has an EGA video card and monitor. Connected to

the file server is an HP LaserJet printer. The file server has one 5.25-inch disk drive and a hard disk drive. The workstations each have one 5.25-inch disk drive and one hard disk drive.

To set up Works on the network, the administrator

1. Makes working copies of all Works 5.25-inch disks.
2. Copies the following files to the program directory on the file server, called WORKS:

WORKS.EXE	COMM.SCD
MAIN.DIC	SPELL.OVL
HELP.OVL	WORKS.HLP
*.GSD	LEARN.COM
WK.PGM	WORKSONE.CTX
WORKSONE.SCN	WORKSONE.SOB
WORKSTWO.CTX	WORKSTWO.SCN
WORKSTWO.SOB	WORKSTHR.CTX
WORKSTHR.SCN	WORKSTHR.SOB
*.SFT	*.RFT

3. Uses the Setup program to add the printer drivers for the Hewlett-Packard LaserJet printer to the program directory: HPLASMS.PRD, the text printer driver for the HP Microsoft Cartridge, and HIHPLSR.GPD, the 75 dpi HP LaserJet chart printer driver.
4. Uses the DOS ATTRIB command to make the following files read-only:

WORKS.EXE	COMM.SCD
MAIN.DIC	SPELL.OVL
HELP.OVL	WORKS.HLP
*.GSD	*.SFT
*.RFT	HPLASMS.PRD
HIHPLSR.GPD	LEARN.COM
WK.PGM	WORKSONE.CTX
WORKSONE.SCN	WORKSONE.SOB
WORKSTWO.CTX	WORKSTWO.SCN
WORKSTWO.SOB	WORKSTHR.CTX
WORKSTHR.SCN	WORKSTHR.SOB

5. Creates on the file server user directories for each of the four users:

   c:\user1, c:\user2, c:\user3, c:\user4

6. Adds the DOS PATH command to each of the workstations' AUTOEXEC.BAT files:

   path = x:\works

   where x: is each workstation's drive designation for the file server.

To use Works on workstation 1

- At Workstation 1, which is the CGA workstation, User 1 types

  works /n x:\user1 /g cga.gsd

User 1 uses the /G flag because she doesn't always use Workstation 1; she uses whichever workstation is open.

Batch Files

Finally, the administrator creates the following batch file and puts it in the root directory of Workstation 1. This file makes using Works on a network easier for User 1 because the user doesn't need to remember to add the /N and /G flags. The command lines of the batch file, named USER1.BAT, are:

```
works /n x:\user1 /g cga.gsd
cd c:\
```

To use the batch file (user 1)

To use the batch file, User 1:

1. Makes sure that C is the current drive.
2. Types *user1*
3. Presses ENTER.

When User 1 is finished and exits Works, the batch file returns the user to the root directory. The network administrator creates similar batch files for each of the four users.

Information in this document is subject to change without notice and does not represent a commitment on the part of Microsoft Corporation. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of the agreement. The purchaser may make one copy of the software for backup purposes. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose other than the purchaser's personal use without the written permission of Microsoft Corporation.

© Copyright Microsoft Corporation, 1986, 1987, 1988.
All rights reserved.
Simultaneously published in the U.S. and Canada.

Hewlett-Packard® is a registered trademark of Hewlett-Packard Corporation.
PostScript® is a registered trademark of Adobe Systems Incorporated.

Document No. 990070011-105-R00-0388
Part No. 02259